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ABSTRACT

This book examines the health and safety implications of September 11, 2001, for seven public schools that were in the World Trade Center impact zone. From accounts of students, parents, teachers, and administrators, the report describes: (1) evacuation procedures of these schools on September 11; (2) communication flow between the New York City Board of Education (BOE) officials and parents; and (3) the health and safety decision-making processes of BOE. In addition, it provides policy recommendations that government officials, schools administrators, and parents should consider with respect to emergency preparedness and school health and safety precautions. (An appendix contains related documentation.) (EV)

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# Schools of Ground Zero

## Early Lessons Learned in Children's Environmental Health

By Sarah Bartlett and John Patrarca

A Joint Publication of the American Public Health Association and Healthy Schools Network, Inc

EF 006 262

# Schools of Ground Zero:
## Early Lessons Learned in Children's Environmental Health

by Sarah Bartlett and John Petrarca

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American Public Health Association and
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# Preface

*by Virginia Fields, Manhattan Borough President*

This past year, the Healthy Schools Network took on the task of examining the health and safety implications of September 11, 2001, for seven public schools that are in the World Trade Center impact zone. Many months of work have culminated in the following report, which provides an honest account of the early months of the experiences of students, parents, teachers, school administrators, teacher union representatives and New York City Board of Education (BOE) officials with respect to September 11.

This report reflects my own experiences of working with parents and BOE this past year and clearly shows that among the many successes involved with enabling students to return safely to their schools, there were also some problems. We must remember, however, that there was a lack of precedence for such events. Furthermore, this tragedy has provided an opportunity to develop policies and procedures that should better equip parents, teachers, school administrators and the BOE to respond to future disasters in the short and long term.

Since September 11, I have worked with the New York City Office of Emergency Management, the New York City Department of Health and Mental Hygiene (DOHMH), medical institutions, business leaders, community leaders, Manhattan Community Boards and my constituents to identify ways that both I as Manhattan Borough President and the public can improve preparedness for potential future disasters. Without question, the events of September 11 taught all New Yorkers—from emergency response professionals to the average citizen—that we can and should improve our preparedness for potential natural or manmade disasters. It also taught us the importance of working together and acknowledging that each of us have separate skills and bodies of knowledge, which in the collective can work for the common good.

The accounts of parents, teachers and school administrators in the Healthy Schools Network report suggest that BOE should expand its work with parents, emergency response professionals, public health professionals, district superintendents, school principals, schools administrators and teachers to identify emergency preparedness strategies that are practical and tailored to address different types of natural or manmade disasters. In addition, I will also suggest that the aforementioned groups participate in exercises that enable them to practice response to emergencies. Although thankfully, each child from these seven schools returned home to their parents, I hope that those in charge of caring for this city's children can use these past experiences to become better equipped to respond to future disasters.

Readers will also note the absence of New York City and State's public health and environmental officials in this report's account of BOE's process to assess (1) the safety of returning students and teachers to the school buildings in the World Trade Center impact zone and (2) the remediation efforts undergone to eliminate known and unknown environmental health risks within the schools. I believe that there are two issues to consider with respect to the apparent absence of these agencies. First and foremost, this report is predominately based on the responses of students, parents, teachers and principals who were not necessarily in a position to know whether BOE collaborated with governmental public health agencies. This could account in part for the lack of reference to public health and environmental government officials in the interviews and survey responses.

Second, although DOHMH has an "official" relationship with BOE because it supplies the schools with nurses and health aides, it is my understanding that traditionally, BOE has been the main decision-maker with respect to health and safety issues in the city's public schools. This traditionally sovereign role that BOE has undertaken to address such issues, likely persisted in the process undergone to move students back into the schools. The BOE did convene an advisory panel last fall that consisted of DOHMH, the New York City Department of Environmental Protection (DEP) and several esteemed medical institutions. In my opinion however, the extent to which this advisory panel had any influence in BOE's decisions regarding how to clean up the schools and when students should return to the buildings is unclear. Even if the initial decisions that BOE made along each step in the clean-up and re-occupation process were based on the recommendations of this advisory panel of public health, medical and environmental experts, the report indicates that the parents were not aware of the "expert influence" on the BOE's decisions.

I am convinced that BOE has competent, talented people on staff as its resident experts on health and occupational safety concerns, but clearly, a true collaboration with DOHMH and DEP would provide BOE with a more informed perspective in health and safety decisions of this magnitude. DOHMH's and DEP's missions are to improve the public's health and environmental conditions respectively, while BOE's mission is to properly educate New York City's children. Even though in order to meet the goals of this mission BOE must ensure that the health and welfare of its students are not compromised, BOE as an agency is not an expert on health and environmental hazards in the way that DOHMH and DEP are experts on these issues. In addition, unlike BOE employees who are represented by unions that offer support and recourse to teachers and other school personnel, parents and parent association leaders are volunteers who do not have a clear avenue of recourse when they may disagree with BOE about their child's health or safety at school. Further involving New York City's public health infrastructure in school health and safety matters would provide parents with improved access to health information and an additional avenue of recourse regarding crucial decisions that affect the health and safety of their children.

I was heartened to learn that recently, DOHMH and DEP became official "sister agencies" to BOE. I am confident that this effort on the part of the three agencies will result in innovative initiatives to improve the health of the students and thwart potential health and safety risks as they arise in the future.

This report provides valuable information and insight into (1) the evacuation procedures of these schools on September 11, (2) communication flow between BOE officials and parents and (3) the health and safety decision-making processes of BOE. In addition, this report provides important policy recommendations that government officials, school administrators, and parents should strongly consider with respect to emergency preparedness and school health and safety precautions. I enthusiastically encourage government officials, school administrators, public health professionals, parents and concerned citizens to review this report and apply the recommendations as they see fit. The Healthy Schools Network has done an exceptional job in identifying the challenges of responding to disasters and children's health, and ways in which we all can work to improve emergency preparedness and disaster response for school systems. ■

# Foreword

***by Claire Barnett, Executive Director, Healthy Schools Network, Inc.***

When the Board of Directors of Healthy Schools Network met in New York City in October 2001, the devastating attacks on the World Trade Center were fresh and very painful. The decision to do "Early Lessons Learned" was made then. At the time, I believed that a simple narrative based on staff research and assistance to parents and personnel would cover the period from September 11 through December 11, the first 90 days, by which time public schools would undoubtedly be safely re-occupied.

Our consultants started in January. From October through early May, the office fielded many requests for assistance, collaborated with other groups, and convened three meetings of the seven Parent Associations. Lessons are still being learned. One surprise was learning that while education officials were speaking at national meetings on emergency planning, not once had they ever consulted with the parents. "In Their Own Words," a separate booklet we released in the summer of 2002, highlights advice on emergency planning transcribed from surveys completed by over 300 elementary school parents.

As 9/11 and its aftermath wore on, it became apparent that nearly every issue in child environmental health and safety at school had been thrown into high relief. Schools are not just little offices, and children are not just little adults. Children are particularly vulnerable to environmental hazards. For example, they breathe more air per pound of body weight than adults, they are still developing, and they cannot identify or protect themselves from hazards. Once a school opens, the clock is ticking on the school year. Students who are ill, miss class time; children too ill to stay in the building can't send in a sub to take the math test. Schools are also more densely occupied than offices and difficult to keep clean. School maintenance is a significant problem nationally.

No one should think this story is unique. Nationally more than 50 million students and five million adults are in school every day. There are virtually no standards for buildings, for indoor environmental quality, for monitoring or for reporting child illness or injury. While school employees can often call on the department of labor, occupational health experts, and invoke bargaining contracts, parent associations and PTAs are all-volunteer groups, with frequent changes in leadership, and no institutional capacity for environmental health investigations.

There is simply no system at any level that has the responsibility to protect children's environmental health. When disaster strikes your town, what agency, if any, will "clear" school for re-occupancy by your child? On what basis? ■

# Foreword

***by Mohammad N. Akhter, MD, MPH, Executive Director, American Public Health Association***

The sadness of September 11, 2001, enveloped us all. Amid this tragedy, however, there was cause to celebrate the human spirit. The fire crews, police officers, emergency workers, and volunteers who helped others so selflessly were particularly inspiring, and words cannot adequately express our gratitude.

But to the above list should be added another group of dedicated people who were crucial in protecting some of New York's younger citizens: the New York school teachers, staff, and parents, particularly those from the seven public schools located in lower Manhattan, nearest to Ground Zero. The 6,000 children in these seven schools ranged from Pre–K to Grade 12 and included a number of special needs students. Miraculously, not one child nor teacher was killed or injured, and all eventually made it to their homes safely.

As important as this aspect of the story is, however, the more overwhelming story to be told is the way the decisions were made to evacuate children and to reoccupy schools in the WTC impact zone, including doubling up of students in overcrowded facilities, inspections, subsequent clean up of the school buildings, and the return of the faculties and students to their schools.

This report vividly points out the need for environmental and health standards tailored for school children and school buildings, to protect against both the everyday conditions that exist especially in large city schools, and the special conditions created by such disasters as 9/11. Through interviews with parents, teachers, Board of Education officials, inspectors, and students, the authors of this report have documented not only the dangers of superficial disaster planning on the part of Boards of Education and individual schools, but also the critical need for environmental and public health experts to get involved in making crucial decisions about children's safety and health in our schools.

The Appendix of this report contains copies of statewide environmental health and safety regulations that were in effect prior to 9/11. However they appear to have played no part in any of the decision making regarding the clean up of the school buildings and the return of the children to their original classrooms.

Notably absent in this manuscript is the individual participants' and schools' reliance upon or close involvement with the New York city and state departments of health in either in inspecting the seven evacu–

ated schools, cleaning them up, or in the decisions to let students and teachers return to the schools. In fact, as the report points out, some of the local parent organizations within the schools led the way in the clean up efforts by raising money and hiring their own outside environmental consultants to test for pollutants, and the most vocal parent groups generated the most activity.

Public health departments should be vital in providing guidance, support, and resources to individuals and institutions to assess environmental health risks in cities and states around the country in the event of a multitude of disasters, including terrorism and bioterrorism.

Politics should be no barrier to protecting public health; but starting July 1, 2002, the old New York City Board of Education has been dismantled and the Mayor now directs a reconstituted Education Department. One effect as been that now both the Health and Education Departments are "sister" agencies, and education officials believe that emergency planning will be more coordinated.

My thanks to the authors of this report and to Healthy Schools Network, Inc. for having the foresight to see how valuable the report's findings can be to school districts throughout the USA. This report should serve as a "wake up" call to every public health department, Board of Education, and school system in the country—that they all need to be partners in disaster planning. The wellbeing of our children depends on it. ■

# Introduction

Parents, teachers, principals, staff, and students who attended one of the seven lower Manhattan schools that were dislocated by the September 11, 2001, attack on the World Trade Center have experienced firsthand an event that few others can even begin to imagine.

That experience taught them an enormous amount—about themselves, about the way that public officials behave in a crisis, and about the complex issues surrounding environmental health and safety in schools.

The Healthy Schools Network, which was formed in 1995 to help inform and educate parents and policymakers on health and safety issues in schools, decided it wanted to document the early lessons learned from this experience. This report is the result of that decision.

Interviews were conducted from January to March of 2002, with parents, teachers, school staffs, representatives of the United Federation of Teachers, environmental consultants, and Board of Education officials. Principals from four of the seven schools also agreed to be interviewed, and the authors of the report, the parents of two children at P.S.234, attended Parent Association meetings at five of the seven schools. PTA minutes, school memos, and environmental data and reports were collected and reviewed. In addition, a survey was circulated to parents at P.S.234, P.S.89, and I.S.89. Parents at P.S.150 were told how they could get the survey, and a few sent in their responses. All told, over 300 surveys were received, and the data and comments from those responses were incorporated into the report.

This report attempts to synthesize that wealth of information and insight with the aim of passing on the important lessons learned. In the course of gathering that information, it became clear that certain experiences differed, memories conflicted, and interpretations varied. Where discrepancies arose, the authors attempted to make them transparent. ■

# About the Authors

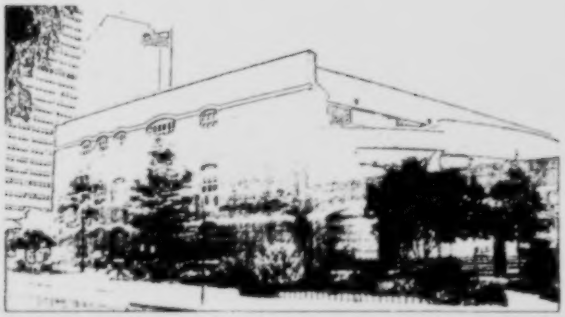
Sarah Bartlett and John Petrarca have lived in the Tribeca area of lower Manhattan just north of Ground Zero for 20 years. Bartlett is a seasoned journalist who has worked at the *New York Times*, *Business Week* and *Fortune* magazines, among other places. She recently accepted an appointment as Bloomberg Professor of Business Journalism at Baruch College, City University of New York. Petrarca, a member of the American Institute of Architects, practices at his firm, StudioPetrarca which does both residential and commercial projects, and specializes in environmental design and construction, with attention to the effect of building materials on indoor air quality. Petrarca served for six years on the local Community Board, chairing the Landmarks Preservation committee.

The couple's two children were attending P.S.234 on the morning of Sept. 11. Bartlett, who was in the school when the two planes hit the towers, brought her children home, where they spent the rest of the morning with their father and some of his employees. Bartlett returned to school to help staff keep the remaining children calm and contact other parents. When the decision was made to evacuate, she returned home, arriving just minutes before the second tower collapsed. ■

# The Schools of Ground Zero

P.S. 89/I.S. 89

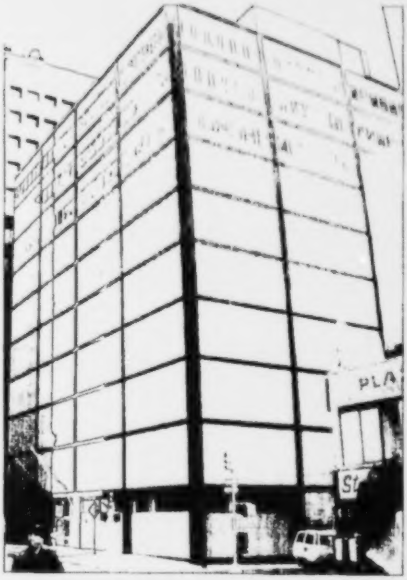
P.S. 150



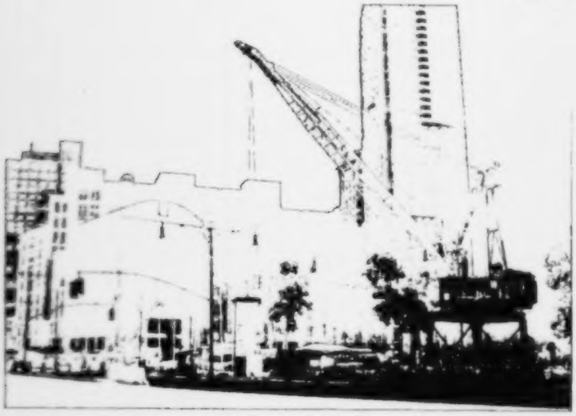
P.S. 234

High School of Leadership and Public Service

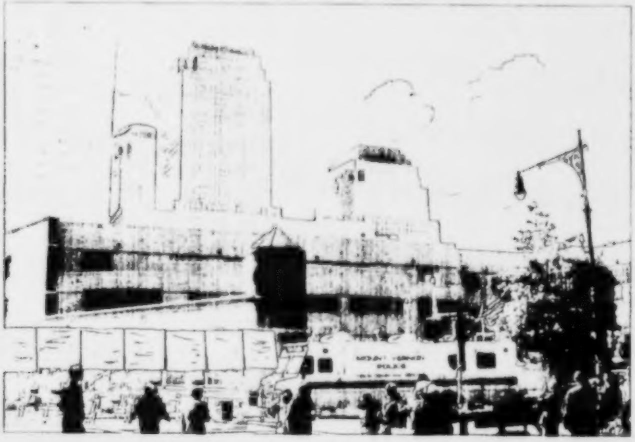
Stuyvesent High School



High School of Economics and Finance



Debris from the collapsed WTC buildings is dumped into barges at Pier 25, just 100 feet from Stuyvesant High School.



Clean up work near P.S. 234

# Part One

## The Evacuation

The tragic events of September 11, 2001, have reverberated around the world. But that day will always have special meaning to the more than 6,000 children who were in seven public schools located near the World Trade Center. Their story is one of amazing fortitude in the face of a terrifying spectacle. Fortunately, every single student who was in those schools that morning eventually made it home to the safety of parents and loved ones, as did every teacher and every member of the schools' staffs. That is not to say that the evacuation went smoothly. Indeed, the purpose of part one of this report is to review what happened at each school with the aim of identifying the early lessons learned from that horrendous experience.

First, some brief background. There are four elementary schools situated about 4 to 6 blocks immediately north or northwest of the site of the north tower of the World Trade Center. There are also three public high schools near the site of the attack, two about 150 feet south of the south tower, and one, Stuyvesant High School, about five blocks north. Within Stuyvesant are three classrooms set-aside for 27 special-needs students, many requiring wheelchairs or walkers.

When American Airlines Flight 11 hit the north tower at 8:46 a.m., the first period classes at all three high schools had already started, so many students were in their classrooms. At

| School | Grade Level | No. of Students on 9/11 |
|---|---|---|
| High School of Economics and Finance | 9–12 | 700 |
| High School of Leadership and Public Service | 9–12 | 728 |
| Stuyvesant High School (and 721M) | 9–12 | 3032 |
| P.S. 89 | Pre-K – 5 | 415 |
| I.S. 89 | 6-8 | 285 |
| P.S. 234 | Pre-K - 5 | 600 |
| P.S. 150 | Pre-K - 5 | 190 |

the elementary schools, by contrast, many children were just arriving and were still in the courtyards or lobbies of their school buildings. Because it was the fourth day of school, many parents were lingering, coaxing their children inside. The importance that timing and the geographical makeup of the various school populations had on the evacuation cannot be overstated. The vast majority of the students attending the elementary schools live in the neighborhood and their parents or caregivers walk them to school. Because the first plane crash occurred at the time of morning drop-off, many of the younger children left with their family members almost immediately. By the time the decisions were made to evacuate the school buildings, fewer than half, and in some case, fewer than a quarter of the elementary students remained. Had the attacks occurred later in the day, when fewer parents were able to reach the schools quickly, or in an area where fewer students are local residents, many more young children would have been in the care of the schools' staffs, which would have made the evacuation far more difficult.

## Deciding to Leave

The first schools to evacuate were the two high schools directly south of the World Trade Center. Even though they did not have a view of the hole that was created in the north tower by the first plane, they felt the physical impact of that crash because of their proximity. Kathleen Gilson, a secretary to the Principal of the High School of Economics and Finance, described her experience in an account that was later posted on the school's website. In it, she tells of hearing "a thunderous explosion." The building shook and, as she looked up, "glass, steel beams and unidentifiable objects on fire started falling very rapidly to the ground beneath."

Ms. Gilson, with her Principal's approval, got on the public address system and announced an immediate shelter drill, meaning that everyone would have to go out into the hallways and away from the windows. As it happens, almost all of the students' classes in that building are on the first seven floors, which are windowless. Next door, at the High School of Leadership and Public Service, after the first plane hit, the vice Principal came over the public address system and urged people to stay calm and to remain in their classrooms. The principals of the two schools began trying to reach each other to figure out what to do. Some parents began to arrive at the schools, wanting to take their children out. The phones were ringing off the hook and administrators were trying to offer assurance to parents that their children were safe.

At 9:03, United Airlines Flight 175 came swooping around and rammed its way into the south tower, which was visible from Ms. Gilson's window. As she later wrote, "I heard my principal yell and in seconds, he spoke to the principal in the school next door and they decided to evacuate. They felt it was a dangerous situation to keep everyone in the buildings at this time."

Thus, the first decisions to evacuate were made quickly by two principals in consultation with each other. At some point, there was also some discussion with the Superintendent of Manhattan High Schools and some guidance from police who were by now streaming into the area. Officials of the two schools told students to stay with their teachers and head for Battery Park, about four blocks directly south. Battery Park was chosen as a destination because it was an area that many students knew, since they often went there to play ball, and because it was considered a large enough space to accommodate all the students. The students were evacuated floor by floor until all were out of both buildings.

Meanwhile, at the elementary schools, the initial response to the crash of the first plane was to try to keep everyone calm but to attempt to continue with the school day. A similar approach was initially taken at Stuyvesant High School. There was much confusion over whether the plane was a commuter plane or a commercial jet and whether the hole in the side of the WTC was accidental or was something more sinister.

After the second plane slammed into the south tower, however, the tenor of the morning changed dramatically. It was obvious at this point that the first plane crash was not an accident but rather part of a coordinated attack. Rumors began to circulate that a third plane was still in the air and could also hit lower Manhattan, and later, that there was a bomb at Stuyvesant. Some principals encouraged parents who were there to take their children out of the schools, while one principal urged parents to stay in the school because she believed it was safer than being on the street outside, where thousands of people were running for their lives. Phone calls began to be placed with increasing urgency to officials at the Board of Education's central office in Brooklyn and to the District 2 office, which is located near Pennsylvania Station, about two miles north.

At 9:59 a.m., the south tower of the World Trade Center collapsed, sending a thick black cloud of dust and debris primarily southwards. By this time, most of the students fleeing the two high schools south of the World Trade Center were already several blocks south of their school, halfway or more to Battery Park. That was still close enough, however, for many to be covered with soot and dust. Some ducked into doorways, covering their mouths with scarves, coughing and choking as they tried to breathe. One student from Leadership and Public Service got so much dust and soot in his eyes that the next morning, he couldn't open them and had to go to the emergency room. Becky Zeng, a wheelchair-bound student from Leadership and Public Service, remembers the scene vividly: Because of all the dust and debris, her wheelchair wouldn't move. "Everyone started running to get closer to the water. My para [professional] picked me up and started running. I was slipping off her back when a man came out of nowhere and carried me," she said.

At many of the elementary schools north of the north tower, the impact of the first tower's collapse was neither felt nor fully comprehended. Indeed, Ronnie Najjar, Principal at P.S. 89 says she did not learn until later that the south tower had completely collapsed. Some school administrators saw the cloud of smoke; at Stuyvesant and P.S./I.S. 89, the lights flickered, and some said they thought the buildings shook. In any event, as word spread that something terrible had happened to the southern-most tower, the pressure on schools north of the north Tower to leave became acute. If the north tower were to fall northward, P.S. 234 would be endangered, and possibly even P.S./I.S. 89 and Stuyvesant.

At Stuyvesant, the Principal, Stanley Teitel, appears to have been the first principal north of the disaster site to evacuate his students. Parents were rushing into the lobby telling him he should evacuate. He told one that he was reluctant to leave because he had 700 freshmen, many of whom had only been coming into Manhattan for a few days. He told one parent he couldn't just "turn them loose." Soon after, someone from the FBI who wanted the building for a command center also advised him to evacuate. That, combined with a nod from the Board of Education, was sufficient to trigger the evacuation decision. In anticipation, teachers had already brought many of the students down, floor by floor, into the lobby. When they got the okay to leave, they were sent out the north door of the building with instructions to stay with their teachers and to head north. Meanwhile, the coordinator of the 721 special education program had already brought his 27 students in wheelchairs and walkers down by the freight elevator. As a result, they were waiting in the lobby with the Stuyvesant students when the evacuation order was given. When the north tower fell at 10:29 am, most of the 3,000-some students from Stuyvesant and 721 were about four blocks north of their school building, away from the worst of the dust cloud.

Meanwhile, across the street from Stuyvesant, at P.S. 89 and I.S. 89, the principals were also trying to figure out their next steps. In fairly short order, the children from I.S. 89 who were on the higher floors were brought down to the ground floor and assembled in the cafeteria, which is in the interior of the building. Children from P.S. 89 were brought to the auditorium and gym, also windowless rooms. Ronnie Najjar, Principal of P.S. 89, began working the phones with the Board of Education, primarily contacting Roy Moskowitz from the District 2 office, trying to get some resolution of when and where to go. "Roy said, 'go to the basement.' I said, we don't have one," she recalls. With rumors of a bomb across the street at Stuyvesant and more planes still in the air waiting to strike, it was hard to know what to do. But Ellen Foote, Principal of I.S .89, was swayed by the police and emergency personnel who were streaming in and out of the building. "I lived in a war zone [in Beirut]. You pay attention to what the people on the ground are saying," she says. "You don't wait for someone in Brooklyn or on Seventh Avenue to make a decision." While she lined her children up on Chambers Street., ready to head north, Najjar made one last effort to get some clarity from the

District office. "Roy was telling me, 'hold on, you're safest in the building.' I said to him, 'you cannot see what I'm looking at. We want to leave. Where do we go?" She believes that if she had not pressed hard, she would still have been there when the second tower fell.

With direction from the District to go to either P.S. 41 or P.S. 3 in Greenwich Village, the 300 or so children from the two schools, plus staff and some parents, finally began walking north along the Hudson River at about 10:15 a.m. When the north tower collapsed, sending dust and debris in their direction, they had already made it about three or four blocks away, sparing their children from the worst of the dust cloud.

At approximately the same time, District 2 officials told the Principal of P.S. 150, Alyssa Polack, that it was time to go and that her students should relocate to P.S. 3. Since P.S. 150 was slightly further north of the other schools and sheltered from a view of the World Trade Center by a tall apartment building, there did not seem to be the same sense of urgency or panic there. About 55 children, many with parents accompanying them, began walking north on Greenwich St., at roughly the same time that the P.S./I.S. 89 students did. They were also several blocks north of their school when the north tower collapsed.

The last school to evacuate was P.S. 234, which was the closest to the north tower. The staff was in frequent contact with the District 2 Office, but their sense was that no one there had any concrete information. To prepare themselves for the worst, the children who remained were gradually moved lower and lower in the building, eventually ending up in the basement. When the first tower fell, about 75 children were in the basement. The impact of the first tower's collapse caused the basement lights to flicker and triggered an alarm bell that made many of the children upset. Finally, at about 10:23 a.m., the Principal, Anna Switzer, was told that her school should be evacuated.

The 75 or so school children at P.S. 234 began streaming out of the school door, ready to walk north on Greenwich Street. Although it took the north tower only about 11 seconds to collapse, those 11 seconds happened to coincide with the moment when P.S. 234 was in the middle of evacuating. As the building began to topple, those at the end of the line, including the Principal, Anna Switzer, were pushed back into the building by police who suddenly appeared; they were told to wait inside until the collapse was over. Meanwhile, those on Greenwich Street began to run frantically northwards. When they stopped to look back, many covered with ash and dust, they could no longer see the school where they knew some of their colleagues and fellow students remained. All that was visible was a dense cloud of smoke. For a few dreadful minutes, as an eerie silence fell over the area, neither group knew for certain what had happened to the other.

In sum, thousands of students that day were in the immediate vicinity when the two towers fell. As a result, many were exposed to gases, fumes, and dust that resulted from the collapsing buildings. When parents from the elementary schools were asked in a survey if their children were exposed as they left school that morning, 125 of the 316 who responded, or 40%, said yes. It is unlikely that students of the two high schools immediately south of the World Trade Center could have left their buildings any sooner than they did. In the case of those north of the towers, however, it seems clear in retrospect that had there not been so much confusion about where and when the schools should go, and so much deference given to opinions of Board of Education officials located several miles away, more children would have been further away from the site of the towers when they fell, which would have reduced their exposure to contaminated materials and toxic fumes.

## After the Evacuation

Each school's experience immediately after the evacuation was different. Many students from the two southernmost high schools made it to Battery Park with their teachers. Some groups, however, went off in different directions, either deliberately, or because they got confused or lost. One student ended up by himself in Chinatown in a daze, not knowing how to get home. Some students didn't want to take a ferry to Staten Island, where another school had been made available to them and instead walked north until they were able to reach one of the bridges that crossed the East River. Many did not reach their homes in other boroughs until 7 or 8 o'clock that night. Because cell phones did not work and the lines at pay phones were sometimes 20-people deep, some parents did not know the whereabouts of their children for hours, or what seemed that day like an eternity.

The students from Stuyvesant seem to have had the worst experience. Their only instructions were to stay with their teachers and head north. However, many students could not find their teachers and did not know their way around Manhattan. They ended up dispersing chaotically all over the city Some walked 60 or 70 blocks north before they found someone who could help them make their way home. As one Stuyvesant parent put it, "This was my daughter's fifth day in Manhattan. She had no idea where her teacher was, or which way was north." He and other parents blame the Principal, Stanley Teitel, for failing to specify a location where they could later regroup. One parent complained that there was no mechanism for accountability: "There was no effort to contact families, or to ascertain whether the kids got home safely." At a hearing in mid-November, the head of Stuyvesant's Parent Association, Marilena Christodoulou, said, "It is my opinion that the way the Board of Education conducted our school's evacuation was unsafe, and it was only a matter of luck that none of our students was injured."

As for the special needs children from 721, because their main campus was on West Houston Street, just a few blocks north of Stuyvesant, they did not have far to go. However, two teachers forgot to turn right when they got to Houston Street and walked their children all the way up to 23rd Street before stopping and contacting the school.

The elementary school teachers and students, by contrast, walked northwards to their specific school destinations in a fairly orderly manner. Since so many parents had already picked their children up, and because many of the parents decided their best bet was to walk north with the children, the ratio of adults to students was high. No one got lost on the way to their respective destinations, and once there, almost every student was picked up by 6 p.m. Some teachers took children of hard-to-reach parents home with them until they could be picked up later.

All were finally reunited with parents or loved ones that night or the next morning. Amazingly no child from any of the seven schools lost a parent in the collapsed towers. However, the principal of the High School of Leadership and Public Service, Ada Rosario Dolch, lost her sister, and a sixth-grade teacher at I.S. 89 lost his brother. Despite the knowledge that morning that they had almost certainly lost their loved ones, both managed to perform valiantly in evacuating the schoolchildren for whom they were responsible.

## Communicating to Parents

Before the evacuation decisions were made, parents who were able to reach their children's schools by phone were told that the children were safe and that they were going to stay there. However, as the morning progressed and evacuation decisions were made, those decisions were often not communicated effectively. The result was that some parents tried desperately to get to their children's schools, only to find that they either could not gain access to the area, or, if they succeeded, that their children had already been moved to another location. "I saw a lot of parents walking around so confused, looking for the kids, crying, because at that time they did not know about the school location (where they took the kids)," one parent from P.S. 89 wrote in her survey comments.

One parent from the same school gave the following description in her survey remarks: "Since I was evacuated to triage in Jersey City, N.J. after the buildings collapsed with two children (one severely handicapped and one 2 1/2 yrs of age), I was certain my daughter was at school and/or with her teachers. (I never doubted that the school's first concern would be the safety of the children.) However, since phones were not operable, my husband came to try to find all of us and said that no one in the Police Department or the Port Authority had any idea where the students had been evacuated and it took him hours to find her."

None of the school officials attempted to directly contact the media to tell them of their impending change of location, relying instead on the District Office or Superintendent's Office to do that. Christodoulou of the Stuyvesant PA, testified in mid-November that, "although the school was evacuated at about 10:30 a.m., as late as 11:30 a.m. the Superintendent's Office, the emergency hotline at BOE, and the TV and radio stations were advising parents that their children were being kept in the school, and that they would only be released to the custody of their parents. It was, of course, impossible for parents to get to Stuyvesant." Similarly, although P.S./I.S. 89 went to P.S. 3 in Greenwich Village, news broadcasters were told, erroneously, that they were going to P.S. 41. Many parents went there, only to find that their children were not in that location. When asked if there was a time after the attack when they did not know where their child was, 87 of the 316 parents who responded, or 27%, said yes. Almost invariably, the children turned out to be with a teacher or a friend, but the experience of not knowing where their children were that terrible morning left an indelible mark on many parents.

## What Was Supposed to Have Happened?

In July 2000, New York State passed the Safe Schools Against Violence in Education Act (SAVE) that called for every school in the state to create an emergency management plan by July 1, 2001, and to update it annually thereafter. This plan was supposed to specify, among other things, where each school would go in the event of an emergency: a local spot if it was simply the building that needed to be evacuated, or a more distant location in the event that an entire neighborhood became unsafe. In addition, each school was supposed to create a school safety committee made up of teachers, staff, and parents. That committee was supposed to meet regularly to review emergency plans and to ensure that everyone knew what steps would have to be taken in response to different types of emergencies.

Based on interviews with various school administrators, it appears that the schools in lower Manhattan viewed their emergency plans primarily as forms that had to be filled out. The guidance document written to help schools comply with the SAVE Act anticipated this, cautioning schools against off-the-shelf plans and indicating that whatever was drawn up should be "user-friendly, easy to read, and understandable." However, the ones in use in September were essentially lengthy forms that ran some 25 pages long, were cumbersome, and unenlightening. "In a real emergency, you can't have a 25-page plan," says Anna Switzer, Principal of P.S. 234. They are not the kind of short, graphically clear documents that telegraph in an instant what someone in a crisis needs to do. As Janis Jones, the president of the PA at the High School for Leadership and Public Service put it, "They have nice big fat stuff they give out, but it doesn't make sense at a time of crisis. I've got it around my house here somewhere."

In addition to being hard to use, many of these plans were also incomplete. All the schools had selected evacuation locations close by. Leadership's alternate location, for instance, if it could not go next door to the High School of Economics and Finance, was to go to the World Trade Center. None had identified locations where they would go if they had to leave the neighborhood. And the details of these plans were not communicated to teachers, many of whom do not live in the neighborhoods where they work and are not necessarily familiar with local street patterns.

Some public address systems did not work properly that day, making communication with staff even more difficult. In sum, the emergency planning measures that would have helped ensure the safe evacuation of children were not in place that day to the degree that they should have been.

## Children's Health Risks

As hundreds of children ran away from their schools, trying to escape a black cloud of dust and debris that threatened to engulf them, no one knew what environmental health threats they were facing. Even today, there is still a vast amount of confusion about the risks to which those children were exposed and the long-term health issues they may face as a result. At various public hearings, experts have testified that those caught in those clouds were exposed to benzene, mercury, dioxins, fiberglass, and asbestos, among other substances, they cannot say with any certainty what risks those individuals will face in the short or long term. There is almost universal agreement, however, that the further away one was from the fumes and the dust caused by the collapsing buildings, the better.

# Part Two

## After 9/11

As New York City reeled in shock, with most people staying home from work, struggling to contemplate the magnitude of what had just happened, an eerie silence settled over the city. Parents began to wonder what was going to happen to their childrens' schools. The buildings, at this point, were in the equivalent of an occupied war zone. There were National Guardsmen patrolling the streets, and many of the schools had become operating quarters for the Office of Emergency Management, the F.B.I. or the Red Cross. The area had no electric power, few working telephones, and in some places, no running water. Even those who lived in close proximity to the schools were not allowed access to the area.

Within a day or two, news organizations began to announce that the schools directly affected by the September 11 disaster were going to delay their reopenings until September 20, one week after the rest of the city's public schools reopened. The news bulletins stated that when those schools did reopen, they would mostly be in the locations where they had evacuated.

| School | Where Evacuated on 9/11 | Where Reopened on 9/20 | Where Moved |
|---|---|---|---|
| High School of Economics and Finance | Battery Park | Norman Thomas High School | |
| High School of Leadership and Public Service | Battery Park | Fashion Institute of Technology | |
| Stuyvesant High School (and 721M) | No specified location | Brooklyn Technical High School | |
| P.S. 89 | P.S. 3 | P.S. 3 | NEST+m |
| I.S. 89 | P.S. 3 | O. Henry Building | |
| P.S. 234 | P.S. 41 | P.S. 41 | St. Bernards |
| P.S. 150 | P.S. 3 | P.S. 3 | |

When businesses displaced by 9/11 relocated their employees, they found empty offices and had them quickly retrofitted. One investment bank even went so far as to take over an entire hotel. The relocated schools, however, were simply put into already-existing and fully occupied (some would say over-crowded) schools. "School children need a cafeteria, they need a gym, in the case of Stuyvesant, we needed labs . . . we had no options except for our existing school buildings," said Burt Sacks, chief executive of external affairs at the Board of Education. The result was severe overcrowding. Both P.S. 89 and P.S. 150, for instance, with 600 kids between them, settled into P.S. 3, which already had 749 kids in a building that was designed for a maximum capacity of 897.

In the case of the high schools, in order to accommodate two school populations in one building, the length of classes was cut by roughly a third and the day was divided into two sessions. One school attended an early one (7:00 a.m. to 1:00 p.m.) and the other attended a late one (1:30 p.m. to 6:30 p.m.). With the elementary schools, two classes were typically put into one classroom. In one extreme case, there were three classes, or nearly 70 children in one room. The general concensus of the parents is that virtually no learning occurred during this period, but that the children benefitted from having their routines restored and having social interaction with their classmates. As the P.S. 150 Education Committee reported to the school's parent body in November, "The first three weeks we were at P.S. 3, we were essentially in a holding pattern—kids, teachers, staff, parents were in shock; we didn't know if we were going back within a week or a day; no one was ready for challenging academic work. Kids needed to be with their teachers, with their friends, and in a familiar setting (school)—regaining emotional equilibrium was a much greater priority than pushing ahead academically."

As parents and teachers struggled with new physical surroundings, limited or no teaching supplies, and overcrowded classrooms, the question began to surface: how long are we going to be in this horrendous situation? At this point, no one could say with any certainty whether it would be weeks or months. Gradually, the focus began to shift from crisis-management to longer-term planning, and where the problem of overcrowding was considered most acute (at P.S. 41, which was hosting P.S. 234, and at P.S. 3), the Board of Education ultimately decided to move some school groups to yet other locations.

With the exception of Stuyvesant, which will be addressed separately, none of the schools ended up returning to their homes until early 2002. During those months of displacement, parents, teachers, and Board of Education officials began the process of figuring out what it would take to move the schools back to their homes, and in the course of doing so, got a crash course in health and safety issues, even the intricacies of ventilation systems. In early October, Stuyvesant hired H.A. Bader Consultants Inc. to supervise the Board of

Education's cleaning and testing. In mid-October, the PTA of P.S. 234 hired an environmental consultant, Environ Corp., to help figure out what air-quality tests needed to be conducted and what physical modifications would need to be made to the school in order for parents to feel secure about their children's eventual return to the building. The following month, Environ Corp. was also hired by P.S. 150 and P.S./I.S. 89. The two high schools south of the WTC site did not hire consultants until early in 2002, around the time of their moves back into the buildings.

Although the specific issues each school faced were different, and depended on their ventilation systems, their locations, and the contaminants that were found inside each school, the general issues were the same: what toxic materials should be tested for? What are the protocols for how those tests should be performed, and how often should those tests be done? What changes should be made to the physical plant, particularly the ventilation system, to enhance indoor air quality? What steps can be taken to improve the quality of the outdoor air? What are the standards that should be required before children are allowed to return?

## Early Days at Stuyvesant

What happened next at Stuyvesant proved to be critical for the rest of the schools. For a host of reasons, having to do with the huge size of that school's population (nearly 3,300), the intensity of the students' desire to get back to their studies in a more hospitable environment, the date when the Office of Emergency Management returned the school to the auspices of the Board of Education for cleaning, and a general lack of information about the true nature of the air quality in lower Manhattan then, the students at Stuyvesant returned to their school on October 9. (The special-needs students from 721M came back to the building one-week later.)

The executive board of the Stuyvesant Parents Association made it clear in the week immediately preceeding the move that they supported an early return, but only if there were no health or safety issues resulting from indoor or outdoor air which would compromise the well-being of the students and staff. In early October, the main contaminant that regulators, Board of Education officials, and parents were concerned about was asbestos. News reports following the collapse of the Trade Center towers had indicated that asbestos had been used in one of them. As a result, asbestos was the focus of most air-quality testing and the EPA's daily reports.

The Board of Education only tested Stuyvesant for asbestos, determined that it was present in the school, and hired a contractor to perform an asbestos clean-up which was deemed to be satisfactory to all parties. Air testing for asbestos was performed immediately prior to the scheduled return date, and Stuyvesant's consultant informed the Parents Association (PA) board in a letter on October 8 of "its expert opinion that the indoor test results are acceptable." However, to ensure the continued safety of the students inside the building, the PA requested that air and water testing continue and that the barge operation near the school, where debris from the Trade Center site was regularly being dumped, be moved.

Almost immediately after the students returned, they began complaining of headaches, sinus and respiratory problems, and coughing attacks. A few had such severe reactions that parents said they had to take them to hospital emergency rooms. To track the health complaints, the Board of Education put a nurse on the premises. However, parents complained that the lines were so long to see her that their children, afraid to miss too many classes, gave up waiting and went on with their busy schedules. In a letter to parents on October 18, the principal, Stanley Teitel, said that 57 students and 31 members of faculty had visited the medical office complaining of a variety of symptoms. He stated that this number was relatively small when compared to the school's total population of 3,253. However, the parents' association, based on a show of hands at a subsequent PA meeting, concluded that the true number of those experiencing health problems was several times greater.

The Board of Education's consultants determined that because all the windows at the school were shut and air intakes were closed as much as possible, too little fresh air was circulating inside the building, resulting in a build up of carbon dioxide. After more outside air was allowed into the building, the Board of Education stated that the air–quality problems, and by extension, children's health issues, had greatly diminished, a position which it maintains to this day.

However, reports continued to circulate through the lower Manhattan school community that health problems at Stuyvesant persisted. When asked about it at a P.S. 150 PTA meeting on November 30, Dr. Terry Marx, the Board of Education's chief pediatrician, is quoted in the minutes as saying, "I'm very comfortable that there are two things going on: Yes, the air is safe that we can measure, and yes, there are people with symptoms." She added, "there really is no risk in terms of long term health."

The effect of the health problems at Stuyvesant, widely reported in local papers, was to strengthen the resolve of parents at other schools not to allow their children to be returned to the buildings prematurely. "Marilena was able to inform others of the bad faith the Board of Education had shown to Stuyvesant. She cautioned us not to rely on their word, but to keep on top of things," said Angela Fremont–Appel, co–chair of I.S. 89's PTA. Even the consultants say they benefitted from Stuyvesant's experience. "Stuyvesant, they went back too early. They really hadn't done sufficient testing or sampling, and we learned from that," says Environ consultant Tom Fusillo.

As the Office of Emergency management gradually returned the other schools to the Board of Education for cleaning, testing showed that they too had been contaminated with asbestos, and in some cases, lead.

## Summary of Environmental Problems Found in Schools After 9/11

**High School of Economics and Finance**
- Initial findings of asbestos in dust
- Early February '02—asbestos found in dust above ceiling tiles

**High School of Leadership and Public Service**
- Made an assumption, based on test results at the High School of Economics and Finance next door, that there was also asbestos in dust
- 1/20—Asbestos found in dust in two classrooms and in air in basement and gym
- 2/27—Measures of carbon dioxide exceed regulatory standard

**Stuyvesant High School**
- Initial findings of asbestos
- 10/9 to 1/2—On more than 50% of those days, respirable particulates inside school have exceeded EPA guidelines for children
- On one day in December, and 1/2, 1/31, 2/6, and 2/19—levels of lead dust exceed EPA guideline

**P.S.234**
- Initial findings of asbestos from roof, play areas, and soil samples.
- 11/29-12/2—Respirable particulates exceeded EPA guideline for children on 3 of 4 days
- 2/19—Lead in dust inside school exceeded EPA guideline
- Respirable particulates 2/4 onwards frequently exceeded EPA guideline for children
- Mid-February to mid-March—Carbon dioxide exceeds maximum recommended level

**P.S./I.S. 89**
- Initial findings of asbestos in soil from playground and traces inside school.
- 12/11—Trace levels of asbestos in dust samples from unit ventilators
- 2/19—Lead dust inside school exceeded EPA guideline

**P.S. 150**
- Initial findings of lead and asbestos in dust samples.
- 11/29 and 12/2—Respirable particulates above the EPA guideline inside school

All the schools were professionally cleaned by contractors licensed to deal with the specific contaminants, and then more testing ensued. As test results began to come back indicating that the buildings were consistently clean and safe, the Board of Education began to initiate conversations about returning the school populations to their original homes.

## What Was "Safe"?

To parents, the question of when it was "safe" to return their children to a school in lower Manhattan was an excruciatingly difficult one. Until September 11, they had always assumed that their children's school was safe, and then they learned in a most horrific way that it was not. Having been proven so terribly wrong once, it was difficult to get comfortable with the idea that they could ever trust their instincts, or any officials' statements, again, particularly when what was at stake was the health of their children, not some abstract sense of security.

What made this even more difficult was the lack of reliable information on which one could base such a crucial decision. The medical community was divided—there were experts who stated that the air was safe, and there were others who said that it was not, but that parents might not see the damage for 20 or 30 years.

Some parents grew suspicious of government data. Reports began circulating in newspapers that the EPA wasn't releasing all the data that it was collecting because if it did, it would scare away all of lower Manhattan, if not half the city. The EPA was insisting the air was safe, and the Board of Education had allowed Stuyvesant students to return to their building, yet students were getting sick. And the problem wasn't just at Stuyvesant. At the Borough of Manhattan Community College across the street from the high school, which reopened on October 1, over 600 students dropped out citing, among other things, burning eyes, headaches, chest pains, and asthma, according to a faculty representative at a later hearing.

Frustration over federal government data even came to be shared by Bernie Orlan, Director of Environmental Health and Safety at the Board of Education. Apparently, shortly after the collapse of the Trade Center, the U.S. Geological Survey sent in a team to analyze the dust. They subsequently determined that it had a pH of 9.5 to 10.5, meaning that the dust was about as caustic as liquid drain cleaner. "I walked around P.S. 89 and wondered, 'Why are my eyes burning?' I didn't hear about the U.S. Geologists' survey until two days before it was released," Orlan told parents at a PTA meeting in mid-February.

Contributing to the state of confusion was a lack of agreement, even among the experts, on the methods of air testing and how to interpret the results. Virtually all government standards for what is considered an acceptable level of toxicity or contamination make the assumption that the subjects in question are 150-pound white men. Little thought has been given to coming up with standards for young children who breathe more air per pound of weight into bodies that are still developing. Orlan says that one of his most difficult problems was that he was put in a position of "developing and enforcing standards that don't exist."

The schools' environmental consultants, in conjunction with the Board of Education and the United Federation of Teachers (UFT), eventually agreed on a protocol for air and dust testing. But even then, debates arose over the particular testing machines used and how the measurements that were generated should be interpreted. The case of respirable particulates, commonly known as dust, is a good example. The Board of Education used machines called TSI DustTraks to give instantaneous measurements of dust in the air inside and outside the schools. However, both Environ's Fusillo and the UFT's industrial hygienist say that those machines are known to overstate the actual amount of dust in the air, and note that the level considered acceptable by the EPA is meant to be an average for 24 hours, not simply one moment in time. When the PTA at P.S. 234 requested that the Board of Education test elsewhere in the city to give a basis for comparison, parents learned that dust at a number of locations, including St. Bernard's where their children had just spent the last four months, was sometimes higher than it was at P.S. 234. "This was one of my frustrations with the Board of Education," said an exasperated Fusillo. "They're shooting themselves in the foot with numbers that show there are problems where there aren't."

That wasn't the end of it. Scientists testified later at hearings that government measurements were only tracking *large* specks of dust, and that if more sensitive testing devices were used, as they had been after the Mount St. Helen's volcanic eruption, they would see far more disturbing results. It was these *very fine* particulates, they said, that were the true cause of concern. They indicated that officials at the EPA should have known this and raised questions about why this kind of tracking had not been done.

Another group of doctors raised an altogether different issue: even if measurements for asbestos or lead or respirable particulates were each separately below the government threshold, no one could say what the effect of all of them combined might be. "Even if air in a particular location does not exceed standards for individual pollutants, combinations of carcinogens, toxins and irritants, elevated above background levels, could well be harmful to human health," said Dr. Stephen Levin of the Mt. Sinai Selikoff Center for Occupational and Environmental Medicine at a New York State Assembly hearing.

In sum, parents, principals, teachers, and staff had to make decisions on when it was safe for schools to reopen based on their own highly subjective views of their children, their trust in their advisers and the data, and ultimately, their guts.

## The Players

Into this confusing environment marched a diverse group of players. One principal had spent many years living in Beirut and was not entirely surprised by the attack, while another had to recover from the shock of losing her sister in one of the Trade Center towers. Another had just months before, adopted her first child.

As for the presidents of the PTA, the range of experience also varied widely. Janis Jones, at the High School of Leadership and Public Service, says she became its PTA president by default, because none of the other five people who showed up at the election the year before was willing to do it. A welfare mother without access to a computer—her early approach with the Board of Education was to trust them to do their job. "I listened to what the Board of Education said. I took a tour with other parents, and they swore to sweet Jesus that everything was good," she says. At the High School of Economics and Finance, right next door, the PTA president is Carol Cantrell, a former deputy commissioner of a city agency with 11 years of experience working with city officials. She was confident that her understanding of the inner workings of city bureaucracies would hold her in good stead when negotiating with the Board of Education. The fact that Citigroup, Chancellor Harold Levy's former employer, had taken the school under its wings and had a senior executive chair its advisory committee probably didn't hurt either.

The president of the P.S. 234 PTA, George Olsen, was a real-estate lawyer and former infantry platoon leader for the U.S. Marines in Vietnam. He believed in speedy action and delegation. Some of the key parent leaders at P.S. 89 and I.S. 89 were quiet-spoken artists who disliked public speaking and grappled with how to organize their groups effectively. Some, like Stuyvesant and P.S. 234, had actively-maintained and informative websites that served as vital communication links, while others had little or no information available on the Internet.

Some PTAs held regular meetings where every seat was taken, while others rarely scheduled meetings and when they did, they were sparsely attended. At Stuyvesant, 65% of the parents are Asian, of which the largest group are Chinese. According to an associate board member of Stuyvesant's PA, many do not speak English and work more than one job so they were unable to attend meetings. For them, the primary source of information about the school was a Chinese-language newspaper, the Royal Journal, which decided to cover the proceedings.

At a time when the schools might have benefited from more sharing of information and more pooling of resources, there was only limited communication among them. And there was never any communication between the parents of the schools north of the World Trade Center site and those from the two high schools to the south. The elementary school PTA presidents met on several occasions for what everyone agreed were useful discussions. And they had some interaction with Marilena Christodoulou from Stuyvesant's PA. The facilities committees of P.S. 150, P.S./I.S. 89, and P.S. 234 shared information and attended joint meetings with the Board of Education and Environ a few times. The political action committees of the elementary schools worked with Stuyvesant's, particularly on the issue of trying to get the debris removal barge next to Stuyvesant moved. Environ spoke with Stuyvesant's consultant several times, but not to Emteque, which in February began working for the High School of Economics and Finance. And several of the principals shared their thoughts with one another, based mostly on pre-existing friendships.

But there was no consistent collaboration. In part, that was because PTA boards were consumed with their own internal problems. Many PTAs suffered the loss of board members, as parents left the neighborhood, the school, or even the city. And each school had a slightly different set of issues, depending on the idiosyncrasies of its parent body, the views of its teaching staff, its specific location, and the details of each ventilation system. Amid the chaos, the thought of scheduling additional meetings with parents at other schools to hear about their problems seemed inconceivable or of little use.

Sadly, the relationship among the schools was also set back by occasional internecine fighting, as some parents began to harbor resentment towards how different schools were faring and viewed other schools as competitors in a neighborhood quest for support. At one point, for instance, when the schools were still doubled up in other school buildings, the Board of Education indicated to both P.S. 89 and P.S. 234 that they could each move into an empty building on West 13th Street that had previously housed St. Bernard's Catholic School. The effect was to pit one desperate, stressed school community against another, as each began frantically lobbying for the building. When the Board of Education decided to give the building to P.S. 234 and P.S. 89 was told to move into another nearly-vacant school building on the lower East Side, parents from P.S. 89 angrily lashed out at P.S. 234. They felt the new location was hard to reach by public transportation, a particular hardship since so many families were displaced, and that the neighborhood was unsafe. "The whole idea that two schools were each vying for St. Bernard's should never have happened," said Ronnie Najjar, principal of P.S. 89. "The District could have cleaned that all up."

Resentment was also aimed at P.S. 234 because it attracted frequent press coverage, and because the school's aggressive and largely professional parent body used their personal connections to attract significant donations and support from around the city. After some parents at P.S. 150 complained about a special screening of the movie, "Harry Potter" at Lincoln Center's Avery Fisher Hall that had been arranged for P.S. 234 children, the co-chair of P.S. 150's PTA admonished them that it was all the result of active parents and that if they wanted similar things for their children they would have to pitch in more.

Similar tensions flared up among the three high schools. Students from the two high schools south of the World Trade Center, a preponderance of whom are Hispanic or African-American, were upset at the amount of press coverage and sympathy offered to the students from Stuyvesant, particularly since the high schools south of the WTC had been so much closer to the attack. Stuyvesant has long been considered one of the city's most prestigious and academically rigorous high schools, and its students are predominantly white and Asian. "There's been a lot of animosity towards Stuyvesant.

They've gotten a lot of press," said one Economics and Finance teacher. "Our young people haven't had the recognition or the mental health services that they have."

For all of these reasons—disorganization, antagonism, different circumstances, and inertia—there was only a limited effort to gather representatives of the seven schools together, and chart a course or build a united front. Each school ended up dealing with the Board of Education more or less on its own.

## The Board of Education's Response

From the outset, the Board of Education adopted a very consistent public stance. It held to the line that it would do whatever was necessary to clean up the schools, that money was not an issue, that it would not hide any information from parents or try to spin the data, that it would not make decisions in a vacuum, but rather would consult a number of different agencies and advisors, and that it would not force any school community to go back into its building until it was ready.

In response to a demand from the Stuyvesant PA, and to protect itself from charges that it was trying to manipulate the environmental data or skimp on physical improvements that needed to occur to make the schools safe, the Board of Education decided to rely on outside consultants. It hired Burns & Roe, a large engineering firm, to work on the schools' ventilation systems, and ATC Associates Inc. to conduct all the air testing. "I've never negotiated with our consultants, and price has never been an issue," said David Klasfeld, Deputy Chancellor of Operations at the Board of Education, who was essentially put in charge of managing the lower Manhattan schools' issues in the wake of 9/11. "I've always done what our consultants advised me to do." The Board's Department of Environmental Health and Safety, he said, consistently erred on the side of caution in cleaning up the schools. "If we see something, instead of arguing about it, we clean it up," says Bernie Orlan, Director of that department. Overall, says Klasfeld, "I feel enormously proud of how the Board of Ed responded to the crisis… I feel good about the whole thing."

Perhaps not surprisingly, parents have a different view. An assessment of how the Board of Education performed breaks down into three parts: first, how it handled the settling of the schools into temporary quarters; secondly, how it handled physical repairs and improvements to make the schools safe for return; and three, how it handled the timing of the schools' returns. Once again, because Stuyvesant students returned so much earlier than those at other schools, its issues are unique and will be addressed separately.

To make the schools' temporary quarters amenable to the sudden surge of new students, many of the hosting schools needed a major overhaul, and parents generally give the Board of

Education good marks for the speed with which that was accomplished. When P.S. 234 moved into St. Bernard's, for instance, the Board of Education's facilities team worked around the clock for three days to erect new walls, paint classrooms, hang windows, and repair faulty wiring. Similarly, when there weren't enough classrooms at the O. Henry Building on West 17th Street to accommodate students from I.S. 89, the Board of Education quickly sent in scores of construction workers. "They built three discrete classrooms out of space that they stole from the cafeteria, the corridors, and they did it in a week," said Angela Fremont-Appel, co-chair of the PTA at I.S. 89. She notes, however that they were less responsive to administrative needs like phone lines and office space.

The general consensus seems to be that the Board of Education was also cooperative in doing extensive, and expensive, air testing for a long list of potential contaminants. Amie Gross, an architect who was co-chair of P.S. 89's facility committee and a vocal opponent of P.S. 89 returning to its Battery Park City location, told parents at one PTA meeting in mid-January, "On this issue, the Board of Education has been incredibly cooperative, even though we made what some could consider unreasonable requests." Environ consultant Tom Fusillo says the Board of Education initially dragged its feet when more stringent testing protocols were proposed, but that once they were in agreement, the testing went smoothly. As a result of input from Environ, Stuyvesant's consultant H.A. Bader, and the UFT, the cost of weekly tests more than tripled, to $30,000."We cost them a lot of money," says Fusillo, "and they never said they couldn't afford to do them."

Gradually, though, it became clear that the issue was not simply testing the air for the immediate fallout from the collapse of the towers, but rather, how to protect the air inside the schools on an ongoing basis. As trucks hauled debris to and from the barge, contaminants were constantly being recirculated in the air. Moreover, these schools were all going to be sitting on the edge of one of the world's largest construction sites for many years to come. The focus shifted to what modifications would need to be made to the schools' ventilation systems to protect them in the future. Although several of the schools were new, most had little or no filtering to protect indoor air. Some had central air systems that were easier to retrofit, while others had hundreds of individual HVAC units for each classroom that were harder to upgrade.

## Summary of Repairs and Physical Improvements

**High School of Economics and Finance**

- New HVAC system, with dual filters including charcoal-activated for odors
- Replacement of all ceiling tiles
- New air-intake duct placed on top of building

**High School for Leadership and Public Service**
- Air-intake at ground level closed and sealed after school reopened

**Stuyvesant High School**
- Cleaned diffusers, mechanical rooms, and area where air is mixed.
- Retrofitted 300 unit ventilators with 4-ply filters
- Upgraded one central HVAC unit with better filter

**P.S.234**
- Cleaned ducts
- Installed dual 4-ply and activated charcoal filters on central HVAC system
- Closed down unit ventilators in classrooms on ground floor and re-routed central air to those classrooms

**P.S./I.S. 89**
- Cleaned ducts
- Installed dual 4-ply and activated charcoal filters on central HVAC system and on unit ventilators

**P.S. 150**
- Replaced windows with broken latches
- Installed 4-ply filters on all unit ventilators

After protracted negotiations, more efficient filters were eventually installed on ventilation units at all the elementary schools, which helped to block many particulates and filtered out noxious odors. At the High School of Economics and Finance, the Board of Education agreed to upgrade an antiquated ventilation system that had long been the subject of student complaints. However, PTA President Cantrell notes that the Board of Education initially balked at this request, only reversing its decision and agreeing to do the work after she complained about it forcefully at a City Council hearing. "The next day," she says, "they called to say they'd give me what we wanted."

With the notable exception of Stuyvesant, parents were generally accepting of the way the Board of Education modified the ventilation systems to enhance indoor air quality. They note, however, that the improvements were rarely made at the Board of Education's initiative, and only occurred after persistent nudging from parents and consultants. But eventually, most agree that they got the improvements to the ventilation systems that they wanted prior to their children's return to the school buildings. "At no point did anyone say, 'That's too expensive,'" says Fusillo of Environ. "They said they thought some things were not necessary, but they ultimately agreed to do them." Adds Chris Proctor, an industrial hygienist for the UFT who worked on the lower Manhattan schools' issues, "Anything we insisted on or requested, they implemented."

Still, experiences like that of Cantrell led many parents to conclude that the Board of Education was not inclined to be proactive and would only respond if they were relentless (and public) in their complaints and demands. Considering that many parents were already overwhelmed by the loss of their homes, their children's schools, and the transformation of their neighborhood into a war zone, they resented the fact that they had to channel what little energy they had left into forcing the Board of Education to live up to its own rhetoric. They were looking for a partner in restoring their school communities and instead they found themselves facing an adversary. "Parents, not the Board, raise issues to be considered. Then Board officials investigate and attempt to address them. Promises are made to allay concerns. Some are kept; others are not," said P.S. 150 co-president Deborah Seidman Petti in testimony to the Education Committee of the City Council on November 15.

Amie Gross, an architect who was co-chair of P.S. 89's facilities committee, recounts being on a tour of P.S. 89 with Deputy Chancellor Klasfeld in January. In one classroom, she raised the lid on the unit ventilator and found considerable dust and debris inside. She pointed it out to Klasfeld and, because of her professional experience, felt comfortable saying that all of the school's unit ventilators would need to be taken out and vacuumed with HEPA filters before being reinstalled. Klasfeld, she says, insisted that it was physically impossible and that it wasn't going to happen. She did not back down, and ultimately won the day. But the experience disappointed her: Given how overburdened the parents in this community already were, she says, "we should not have to take on the responsibility, as all of us have done in this school, to bring these technical questions to the Board of Education."

## Moving Back

What began as frustration about the Board's perceived lack of initiative turned into anger and distrust when it came time to discuss each school's date of return. Just when the Board of Education began floating return dates, local newspapers reported that the EPA had withheld data showing that the air quality in lower Manhattan was worse than had initially been reported. And local politicians began holding hearings at which doctors and scientists stated that the risks of breathing the air downtown were far graver than had heretofore been acknowledged. Since many families had already returned to their homes, they grew anxious that they were poisoning their children simply by living at home. The thought that their children were out of the area for at least 8 hours a day provided some small measure of comfort at a time when the "truth" about what was safe and what was not was very hard to come by.

In early December, the Board of Education announced to most of the schools that they needed to be back in their original homes by January 4. To many parents and school administrators, the date seemed arbitrary and premature. That was especially so for the elementary schools that had by and large grown accustomed to their new surroundings and did not relish the prospect of what for some would be the third move in four months. Many of the schools were still in the process of being cleaned and there were little or no testing results available. Psychological counseling was only just starting to be provided at several of the schools. An early January opening would mean that already-stressed teachers would probably have to work over the holiday. "I said, to make the teachers work over a holiday was ludicrous," said Alyssa Polack, Principal of P.S. 150. Yet the Board of Education seemed hell-bent on getting the kids back downtown. "My statement to them was that they were pushing too quickly," said Ellen Foote, Principal of I.S.89. "The building had not yet been cleaned or inspected. I told them they hadn't provided us with good evidence," she said.

The sense grew that the Board of Education was committed to moving the schools back downtown more for political reasons than because it was truly safe, and that conclusion generated great distrust. There was also the example of Stuyvesant lurking in the background, where the requests of the Parent Association seemed to go unheeded once the students moved back. Parents began to sense a large gap between what Board officials were saying at PTA meetings and actual occurrences. One example involved P.S. 234. Deputy Chancellor Klasfeld told parents at a heated PTA meeting in early December that they had to vacate St. Bernard's by the end of the month because he had no assurance from the Catholic Church that it would be willing to extend St. Bernard's lease. Yet when parents and newspaper reporters called the Archdiocese's office, they were told that the Board of Education had never even called to discuss the issue and that the Archdiocese would be amenable to a later date. When asked whether there was some reason other than the lease that would explain why the Board of Education was in such a hurry, Klasfeld responded in a PTA meeting that some city and state officials thought it was important for a return to normalcy downtown, a remark that brought hisses and boos from parents in the audience, many of whom lived in lower Manhattan and resented having their children used for what they considered a political purpose.

The most extreme example of the Board of Education's determination to return a school quickly to its home despite potential health and safety issues involved the High School of Economics and Finance. The first wave of students was scheduled to return for an orientation session on Monday, January 28. Yet the Thursday before that, at a raucous PA meeting, the school's UFT representative read off a list of problems he and his advisers from the union had found the day before during a tour of what the Board of Education had assured them was a clean building. Among the problems the UFT identified: there was soot and dirt in several locations in the building; neither the fire alarm system nor the public address system was working; and the water was running brown out of the taps. When Board of Education officials took the microphone to respond, they basically acknowledged that everything the UFT had said was true. The water? "It's aesthetically not pleasing," Orlan conceded. "Does it taste like garbage and do I want to drink it? No. We'll bring in bottled water." The fire alarm system? Klasfeld said a mechanical engineer was trying to fix it. The PA system? Mechanics will look at it tomorrow. The building would be recleaned again. Stay tuned over the weekend, Klasfeld told the group of agitated parents. If we don't finish, we'll call you. (The school did not end up moving back for another month, due to other safety issues that were identified by a consultant, Emteque Corp. that was hired by the Parents Association around that time at Citigroup's urging.) "What happened at Economics should never have happened," said the UFT's Proctor.

By this time, most of the schools were wary of the Board of Education's motivation in scheduling their return and no longer trusted it on matters of health and safety. As the survey results below indicate, many parents ultimately said they were not happy with the way the Board of Education dealt with the array of issues facing their school.

In part because of the mistrust that developed, many PTA boards thought it was important to establish in writing what each school considered the necessary pre-conditions for moving back. Virtually all ultimately succeeded in getting a month's delay in their return dates.

## The Schools' Demands

In part because the elementary schools were primarily neighborhood-based and parents were therefore in frequent conversation with one another, and in part because the elementary schools shared the same environmental consultant, there was considerable consistency in the list of their demands Chief among them was that the fires, still burning underground at Ground Zero, be extinguished. Since many of the families lived in the area, they were aware that there was a particularly noxious smell emitting from the site on a periodic, but consistent basis.

| **How would you rate the job that the NYC Board of Education and Chancellor Levy did working on environmental health and safety issues at your school since September 11?** | **Parents Responding** | **% of total** |
|---|---|---|
| Excellent | 13 | 4% |
| Very Good | 59 | 19% |
| Good | 83 | 26% |
| Fair | 97 | 31% |
| Poor | 58 | 18% |

Other common demands: That additional filters be installed on ventilation systems to improve indoor air quality; that testing be performed both before the return and afterwards, for some considerable period of time; that additional custodians be provided to help maintain the schools' cleanliness after children move back in; that new evacuation policies be in place before the children's return.

As for the two high schools south of the Trade Center, only the High School of Economics and Finance ended up imposing a new demand. Its consultant, hired right before the scheduled return, determined that there was dust above the ceiling tiles that contained small traces of asbestos. After much wrangling, the Board of Education agreed to replace all of the tiles in the building, delaying their reopening until late February.

Even with the delayed dates, for many parents, it was agonizing to decide whether or not to let their children go back. Many felt they were being made to choose between allowing their children to stay with their classmates for the sake of their emotional health, or taking the risk that they were exposing their children to toxins that would cause serious health problems 10 or 20 years from now. The debate pitted neighbor against neighbor, husband against wife, and teacher against principal. Some PTA meetings ended in screaming matches. There were angry exchanges at bus stops. At P.S. 89, which had already lost almost half its students in the wake of the attack, the polarization became so intense that when the PTA went to court seeking a court injunction against the Board of Education, another group hired a lawyer to defend the Board of Education's decision, and their children's right to return. When P.S. 89 finally returned to its lower Manhattan home on February 28, only four of the original 11 board members of the PTA remained. In all, the parents of about 30 children decided not to send their children back to schools in lower Manhattan in January and February, with many choosing to home-school rather than take what they considered unreasonable risks with their children's health.

## After the Return

When Burt Sacks addressed PTA groups prior to their return, he frequently offered assurances that the Board of Education would not desert them. "We're not just going to drop you and leave you on February 4. We will be there with you if you have any concerns or issues," he said at one P.S. 234 PTA meeting. However, several schools did encounter environmental problems after their return, and they did not feel that their problems were quickly addressed.

On the second day back in their building at 90 Trinity, parents of children at the High School of Leadership and Public Service were informed that asbestos was found in dust in two classrooms, and in the air in the basement and the gym. Orlan says he thinks the asbestos came in through the school's only air-intake duct, which consisted of a grate at street level. In other words, the school's primary source of fresh air was at ground level, just 100 feet south of the site of the World Trade Center debris. As a result of the asbestos findings, Orlan closed the school's gym and auditorium for several weeks while he had the grate sealed, and the area cleaned and retested.

Leadership and Public Service is the only school that did not hire an environmental consultant to advise it prior to its return. Its parent group is also the least active: despite the news of the asbestos findings, only 20 or so parents attended that school's first-ever PA meeting that academic year, which was held on Feb. 28. Orlan and Klasfeld say that the Board applied its professional standards equally across all schools, without regard for whether a PTA was organized, or whether it could afford to have expensive professionals advising them. "We've done exactly the same protocol for each of the schools," says Klasfeld, adding that the UFT's environmental experts were also involved at each of the schools and signed off on all the work and testing.

That said, it's hard to imagine that such an obvious risk to the school's indoor air supply would have gone unnoticed at some of the other schools. Fusillo was astonished to hear that the high school's air-intake level was at street level and hadn't been addressed before the students returned. The first thing he did when he was retained by the elementary schools, he said, was to ask for building plans and figure out where each building's ventilation systems were. In fact, when he learned that P.S.234's air-intake was on the roof, he insisted that the Board of Education, which had already cleaned the roof to its satisfaction, remove the gravel stones that covered it. Although the Board initially resisted, and the cost of the removal was high, large amounts of dust and debris were discovered there, which on a windy day might have blown right into P.S. 234's central air unit. After that experience, the gravel was also removed from P.S./I.S. 89's roof.

Even at a school like P.S. 234, where the parent body was organized and the consultant was attentive, there were problems after the students returned that the Board did not resolve quickly or to parents' satisfaction. The traffic guard the Board of Education had promised only showed up intermittently. More disturbing, within a week of the school's reopening, air-tests showed that there was a build-up in carbon dioxide levels, similar to what had happened at Stuyvesant. There seemed to be a problem with the heating controls, and Burns & Roe came and investigated. But several weeks later, no repair work had been done and the levels of carbon dioxide continued to exceed regulatory maximums. Children were complaining of headaches and drowsiness. When questioned about this discrepancy between the Board's words and its actions, Orlan said this was the first he had heard of the problem, even though he had received numerous phone calls and faxes about it and had been to a meeting with Fusillo and the school's Principal and PTA head on the subject. George Olsen, P.S.234's PTA president, came to believe that certain Board officials were deliberately ineffectual, as a result of a general contempt many in bureaucracies feel towards those they are paid to serve. To Fusillo, it was more that the Board had too few staff members to handle this large a problem. By dragging their feet, he said, "They were probably hoping we'd just go away… Things slip through the cracks unless you stay on top of them."

## Troubles at Stuyvesant

No school tried harder to "stay on top of them" than Stuyvesant, which was returned to its home base on October 9, less than a month after the collapse of the towers. After the school was cleaned, and several days prior to the students' return, the Board of Education's Orlan tested for the presence of asbestos. He says it simply didn't occur to him to test for a broader array of materials, adding that no one else at the time was suggesting the need for it either. "If I had it to do over again, I would have started sampling for everything earlier," he said in an interview later. He adds that based on the results he's seen, he doesn't think he would have found anything different, but "whether or not I sent them back too early, I'm not going to know for 30 years."

Stuyvesant's situation is unique in another respect: The school sits just 100 feet south of Pier 25 where trucks have been coming every day by the dozens to dump debris from the collapsed WTC buildings onto barges which then depart for Staten Island. With the prevailing winds blowing southward, Stuyvesant is more exposed than any other school to contaminants that are blown its way as dust rises from the truck loads each time they are dumped. After an initial round of complaints, parents were told that the trucks would be hosed down before leaving Ground Zero and covered with tarpaulins. "But are they doing it?" asks Orlan. "That dust can be airborne." In addition, many of those trucks sit out on the West Side Highway, idling their engines. Although regulations require them to turn off their motors after three minutes, Orlan wonders how often that actually occurs. Of all the things he's seen, it is the idling of the diesel trucks and the barge operation that concern him the most.

Stuyvesant's parent association and its consultant, H.A. Bader, believe that the barge operation and the trucks create hazardous conditions in the air outside of Stuyvesant, which in turn can lead to recontaminated air inside the building. As early as October 25, Bader wrote in a letter to Stuyvesant's PA that "The dust levels in the school are unacceptable and represent a potential health concern."

According to a parent association report, on more than half the days between October 9 and February 1, the level of respirable particulates, or dust, inside Stuyvesant exceeded EPA guidelines for children. The report also noted that lead dust in excess of regulatory limits had been found on windowsills and floors inside the school several times during the winter. According to information provided to the PA by the school administration, at least three members of the faculty and 20 students have transferred out of the school, citing medical problems. In addition, the school newspaper reports that several custodians have contracted chemical bronchitis. In late April, the National Institute for Occupational Safety and Health (NIOSH) released a preliminary report of its evaluation of the Stuyvesant staff, which concluded that 50-60% reported respiratory symptoms after the 9/11 disaster—the majority of which were new onset symptoms—and that 20% still had those symptoms in late January.

The Stuyvesant PA has been highly critical of the Board of Education's performance almost since the day the students moved back. Early on, it complained that the Board had not drained and cleaned the school pool, as had been promised, yet had let children swim in the water, and had not been vigilant about cleaning the footbridge that leads into one of the school's entrances. Filters that were supposed to have been fitted onto the school's unit ventilators took so long to order and to install that the students and staff were in the building for four months before the work was completed. Parents were also frustrated that although a comparative study of their children's health was promised, it still has not materialized. But the biggest complaint was that the Board of Education had not thoroughly cleaned the school's ventilation ducts prior to the students' return, and had not upgraded the school's central air system to allow for more efficient filtering that would better protect the school from recontamination. Because of the type of central air system that was installed at Stuyvesant when it was built, the Board of Education's consultants concluded that it was only realistic to upgrade the filters to make them 40% efficient, compared with over 90% efficiencies achievable at the other schools north of the Trade Center—and even that took four months to accomplish. The Board of Education maintained that upgrading the filters any more than that would have required immense reconstruction inside the school, a process that would have been expensive, time-consuming and disruptive.

In fact, the Board and its consultants considered a variety of filtration options for Stuyvesant—many of which would have provided greater filtration efficiency than the filters that were ultimately installed. The options considered included pleated filters, bag filters, and Odor Guard filters, each of which had a filtration efficiency of greater than 85%. Ultimately, however, Tri-Dek Ring Panel filters—that tested at an efficiency of 39%—were used on most of the components of the ventilation system.

For months, the Board insisted that the cleaning of the ventilation system was adequate and that the level of filtration the Stuyvesant PA was requesting was unreasonable. Deputy Chancellor Klasfeld maintains that HEPA filters of the kind Stuyvesant's PA is seeking are intended for confined areas like hospital operating rooms, not a large building where doors are constantly being opened and thousands of people are tromping through every day. "In each of the buildings, we went far beyond what was legally necessary in order to assure the students, parents, and staff that the buildings were safe and appropriate for them to return," he says.

With each side digging in, letters between the Stuyvesant PA President Christodoulou and Deputy Chancellor Klasfeld have grown more personal and more hostile. In one letter to parents, Klasfeld accused the Stuyvesant PA of circulating a report which contained "numerous inaccuracies and misstates the plain meaning of a large amount of environmental testing data. I can only conclude, from the report's use of sensationalistic language that the intent of this report is not to provide parents with useful information, but rather, to cause further stress and divisiveness to the Stuyvesant community and to damage the school's mission for educational excellence."

In a letter to parents on February 25, Christodoulou responded: "Unfortunately, the Board of Education (BOE) has introduced a high level of politics and divisiveness in this process, including personal attacks against the PA leadership and covert communications with certain members of the PA Executive Board. Recently, parents have received several letters from Deputy Chancellor Klasfeld trying to discredit the PA Environmental Health & Safety Committee reports and to reassure parents that the environment inside and outside the school is unequivocally safe. As a result, we are forced to spend our time and energy opposing the position of the BOE, instead of working collaboratively with them for the benefit of our children."

In June the stalemate finally ended. On June 10, the Board of Education released test data from late April that showed that samples taken from the school's unit ventilators and central air ducts contained lead levels many times higher then regulatory limits. With the help of several letters from the Parent Association's newly hired attorney, a former Watergate prosecutor named Richard Ben-Veniste, and an assurance from FEMA that it would pay for the work, the Board of Education closed the school in mid-July for six weeks so that the cleanup could finally take place.

## Effective Strategies

The evidence suggests that when action is not forthcoming, the best and only way to get the Board of Education's attention is to become very public, either by generating press coverage or by going to court. Many parents were reluctant to choose either route, fearing retaliation. However, when such action did occur, it did lead to movement.

When P.S. 89's parents were deeply divided over when to return and were seeking a delay, Chancellor Levy repeatedly refused to meet with them and insisted through a spokesperson that their return date of February 4 was not negotiable. After the PTA retained a lawyer who wanted to seek an injunction, however, Levy agreed to a meeting with the parents and subsequently offered the later date of February 28. Similarly, at Stuyvesant, it was only when parents began openly discussing a lawsuit to force the Board of Education to clean the schools' ducts and upgrade the filtration system, that the Board of Education began seriously exploring both options with its consultants.

There is, however, likely to be a limit to parents' ability to browbeat the Board into taking steps that it doubts are truly necessary, and that limit is probably close at hand. When it could count on FEMA to pay for at least a large percentage of its expenses, the Board was more willing to state that money was no object. Now that tests show that, by and large, the schools are not contaminated, Orlan believes FEMA will stop reimbursing the Board for the $30,000 a week or so it's been spending. "There's no regulatory reason why we need to do it, and giving lower Manhattan parents a warm, fuzzy feeling won't cut it," he says. Orlan says that most tests now are being done to give parents an added level of security, but that, with the Board of Education facing severe budget cuts, its willingness to continue that posture is declining. In other words, parents with children in lower Manhattan schools will soon be on their own.

## Conclusion

September 11, 2001, and the months thereafter was surely the worst experience many parents and their children have ever had to live through. They hope and pray that it will be the last such event, but they worry that they now live in a world where there are no such assurances.

About the only thing that takes the edge off that feeling of unease is the fact that some very positive things also came out of this experience. Chief among them is the sense of community that, while present before in lower Manhattan, grew in intensity. Parents reached out to each other in ways that they had never done before. "It was very much of a community-building experience," said Angela Fremont-Appel, Co-Chair of the I.S. 89 PTA. They traded tips on temporary housing, details on which masks would prevent their children from inhaling particulates, and sources for emergency relief funds. They shared news of store reopenings and subway route changes. And they frequently became more active in their children's schools. In answer to a survey question, 134, or 42% of the parents who responded said they were now more active in their child's school as a result of the attack. In the early days, they packed and moved boxes, painted walls, donated books and games—and even water—in a spirit of unity. For many, a sense of compassion towards one's fellow sufferers gradually replaced the feelings of terror and insecurity. As one parent from P.S. 234 wrote in her survey remarks, "I am now part of the school community. This is a positive outcome. The openness after the attack broke down the polite distance I had with other parents." Just as many mental health experts had predicted, when the children returned to their schools in lower Manhattan in 2002, another round of healing occurred, as routines were more fully restored and the intimacy of familiar surroundings helped everyone relax that much more.

The education that parents got about air quality and its importance to their children's health also is likely to have a long-term, positive benefit. As parents grew more familiar with the language of respirable particulates, 4-ply filters, and DustTraks they began to realize that air-quality issues are critical in any school in a heavily polluted urban environment. Even as the Board of Education finally agreed to clean the ducts at Stuyvesant, Deputy Chancellor Klasfeld noted in a letter to the school's lawyer that lead levels similar to those found at Stuyvesant were also found at the testing company's "control school," I.S. 306 in the Bronx, which was built at a similar time as Stuyvesant with a similar ventilation system. But without FEMA reimbursement, and with no proven connection between those lead levels and 9/11, that school's lead problem will presumably not be abated. As Bernie Orlan testified before the EPA's national ombudsman on March 11, "to my knowledge, schools are built — were built, hopefully it will change, not for ventilation for the occupants of the building, but rather to safeguard the mechanical equipment itself. So filtration was only sufficient for the big chunk of particulates that wouldn't choke and damage the equipment as opposed to what would be safe for the students and teachers in the school."

Ground zero parents learned the hard way that few schools are built to filter out the fumes and dust that they now know exist in the air on a typical day and that pose health risks to their children.

They want other parents to know what they know.

# Part Three

## Lessons Learned

If you ask Principals how they and other members of their staffs feel about their performance on September 11, the response is almost always the same: "Given the unprecedented nature of the event, I can't think of anything we could have done better." When asked what, in retrospect, they thought their school could have done differently, 210 parents, or 66% of those who responded, said "Nothing. They did the best they could." Carol Cantrell, president of the PA at the High School of Economics and Finance, says, "I think they did a miraculous job. I have heard a few stories and I know some parents were angry. Some kids decided to go in a different direction, some kids were left without teachers. But you know, people were running for their lives. There was no plan, this was crisis mode." That spirit of acceptance probably reflects the scale of the disaster: faced with an event as horrifying and unprecedented as that which occurred on September 11, it seems like a miracle that all the school children made it home without suffering any major physical injuries. But to celebrate that victory does not mean that there is nothing more to be learned from this experience. Indeed, there are many important conclusions to be drawn:

1) In an emergency, people often rise to the occasion and are helpful and supportive. However, this is not universally true. On September 11, some parents and teachers became physically or emotionally incapacitated and were unable to provide support. In fact, a few became so traumatized that they needed attention themselves, siphoning resources away from school children at a critical time. If there ever is another such attack, it is conceivable that the degree of panic among adults could be much greater, because so many more will be able to imagine a level of devastation that heretofore would have been incomprehensible. On the 11, by contrast, few were able to appreciate the scale of the disaster and therefore most were able to function effectively.
Proposal: **School administrators need to build into their emergency plans the notion that some portion, perhaps 5%, of the school staff will not be able to help and may even leave the scene. A buddy system for teachers might help mitigate this problem, particularly in the event that there are substitute teachers faced with a sudden crisis.**

2) Decisions to evacuate were generally done in consultation with a central office not located near the site of the emergency and without full knowledge of local conditions. Principals did not seem to feel fully empowered to make split-second decisions about how to respond to the emergency. Had they felt so empowered, some schools might have been evacuated sooner, with fewer children exposed to health risks.
Proposal: **In an emergency, principals should attempt to gather all pertinent information, but they**

**should also make immediate evacuation decisions if they deem it necessary.**

3) Basic communication devices were inadequate in this emergency. Phones were commandeered in some instances by emergency personnel. Most cell phones were not operational. The public address systems were not all fully functional.
**Proposal: Schools should be equipped with emergency communication devices, such as non-public emergency radio systems, and public address systems should be inspected and maintained on a regular basis.**

4) The Board of Education says that 30-40 officers from a task force unit came to the lower Manhattan schools the morning of 9/11. But school administrators say they received little or no help or support from emergency personnel. In one or two instances, emergency personnel did advise school principals to vacate their schools, but the impression was given that that was a byproduct of their seeking to occupy the buildings and not because they had been sent there to offer assistance. In most instances, there was little or no contact with firemen or policemen, and little or no guidance about the external conditions and what the schools should do. It was as if the Office of Emergency Management had no idea that there were 6,000-some students in the immediate area who needed direction and assistance. "Nobody seemed to know we were there. Nobody evacuated us, we evacuated ourselves," said Anna Switzer, P.S. 234's Principal.
**Proposal: There needs to be much tighter coordination between emergency management teams and school officials. At a minimum, one police officer should be directed to go to each school in an emergency, to assist and coordinate with other emergency personnel.**

5) State regulations require that school safety committees have regular meetings to discuss different scenarios and emergency plans. Those committees rarely, if ever, met and most schools said that other than fire drills, they were completely unprepared for this kind of emergency, which was, admittedly, unprecedented.
**Proposal: Each school needs to make emergency management planning a priority, with regular meetings and carefully thought through plans that are then communicated and internalized. The Board of Education needs to hold principals accountable for ensuring that those steps take place.**

6) The schools' emergency plans called for each school to evacuate to a location nearby, which proved to be of no use in a disaster as far-reaching as the one that occurred on 9/11. State regulations call for each school's emergency plan to identify a variety of locations in case it becomes necessary to leave the neighborhood. Such planning never occurred and schools had to make their decisions on the fly. In one instance, no specific evacuation location was ever communicated to teachers or students, resulting in an unsupervised and chaotic dispersal.
**Proposal: Different types of emergencies require different evacuation locations. School emergency plans should identify a variety of options relevant to different situations so that in a crisis, teachers and students know what to do. The Board of**

**Education needs to hold principals accountable for ensuring that this takes place. Parents need to be informed at the beginning of the school year what the evacuation locations will be, so that in an emergency there is not so much confusion over where to find their children.**

7) School emergency plans are generally perceived by school administrators as an unwelcome, bureaucratic imposition. They are regarded as little more than annoying forms that have to be submitted. In their current format, they are too long, too formalistic and too cumbersome to be of any real value.
Proposal: **With input from school administrators, school emergency plans should be transformed into short, easy-to-grasp documents that fulfill a vital need. The foundation of the plans should be a local hazard analysis. Although individual school emergency plans are not subject to disclosure, for security reasons, summaries of them are supposed to be made available for public comment at least 30 days prior to adoption. Parents should take advantage of this opportunity to get more involved in the process and to make suggestions. (A list of questions that emergency management plans should address is available in Appendix A.)**

8)Thankfully, every child in lower Manhattan made it home safely within 24 hours of the attack. However, not every school did a good job of assuring that. The elementary schools worked hard to keep track of their children and to ensure that each child was accounted for. With the high schools, however, partly because of the speed with which some of them had to leave the area, and partly because of the size of the schools and the age of the students, many students were not accounted for and schools did not take steps to make sure that all students arrived home safely.
Proposal: **After an emergency, each school should be held accountable for confirming that each student got home safely. To assist this process, schools should issue identity tags at the beginning of each school year that children could put around their necks in an emergency (or, if they like, on a field trip). It would list the child's name, school, and school emergency contact information. These could be kept in an easily accessible location in each classroom.**

9) In the haste of the evacuation, much confusion arose about how important it was to gather students' emergency contact cards. At the last minute, some school administrators decided they needed to go in search of them, and became separated from their children, who were in the midst of being evacuated. Staff at other schools didn't care because they figured they could access the information from a central database once they arrived at another school location.
Proposal: **Central databases that can be accessed from other school locations are a great help in an emergency and should be updated and maintained. In the event that school administrators decide that they would also like to have hard copies of their emergency cards, they should keep them in an easily transportable case in an immediately accessible location.**

10) Many parents, especially those with more than one child, realized that they had no way of contacting their spouse to coordinate who was picking up which child and where they should meet afterwards. With the area off-limits and phone service limited or non-existent, many found it hard to regroup with their families.
**Proposal: Families should have their own emergency plan that includes multiple ways of contacting each other in the wake of a disaster. Children, when age appropriate, should have contact information with them at all times for family and friends.**

11) Some parents were not able to get to their child's school quickly because of the shutdown of public transportation services and street closings.
**Proposal: Parents should inform the school at the beginning of the school year of other parents who are authorized to pick up their children in the event of an emergency. Schools should keep those records in an easily accessible place.**

12) There is a danger that schools will become prepared for a repeat for the last disaster, and not adequately anticipate a totally new and different one. Many school administrators said that, based on their experience with September 11, they would plan to leave their schools faster than they did that day, and go to destinations further away. However, if a new attack were to take the form of a radiological event or a gas leak, for instance, it might turn out that the safest strategy is to stay in the building. The SAVE Act requires that schools develop specific guidelines for a whole variety of emergencies, such as biological, radiological, kidnappings, and bomb threats. Each type of emergency requires a different response.
**Proposal: Schools need to take seriously the requirement that they prepare for a host of different emergencies, and the Board of Education should hold principals accountable for meeting that requirement. Parent groups should exercise their right to see building plans in summary form 30 days before adoption, to ensure that the full range of emergencies is covered.**

13) On September 11, there was very little special consideration given to children with special needs. At Stuyvesant, some children in wheelchairs, already on some of the highest floors in the building, were taken to floors even higher. Two girls in wheelchairs at the HS for Leadership and Public Service were told to stay at their desks after the first plane hit, rather than being taken to the ground floor in an elevator. They made it to safety that day because of the devotion of their two para-professionals, not because there was a system in place to ensure their security. Parents were able to pick up the special needs children at P.S. 234 before the long walk north to P.S. 41, but had they not, it is unclear how they would have procured transportation assistance.
**Proposal: As part of the emergency planning process, greater attention needs to be given to methods of evacuating children with special needs.**

14) Information about health and environmental conditions in lower

Manhattan and more particularly, in individual schools, was incomplete and contradictory throughout the fall and winter when critical decisions about re-occupying schools were being made.

**Proposal: Faced with a barrage of confusing information, the parent groups of the various schools would have been helped by banding together and assembling a panel of medical and environmental experts who could have advised them, helped clarify information, and lent credibility in discussions with public officials.**

15) When it comes to the health of school children and the environmental safety of a school, one might expect that certain objective standards could be agreed upon and applied equally across all schools. But the extent to which children's' health at the various lower Manhattan schools was protected after September 11 turned out to depend on subjective variables such as a) the leadership and negotiating skills of particular PTA members, b) the preexisting physical conditions of each school building, c) the level of activity of the parent body, d) the extent to which parents and school administrators relied on external pressure, such as legal challenges and media exposure.

**Proposal: To ensure that weak or disorganized schools aren't at a disadvantage and that standards for health and safety are evenly applied, schools need to form a united front, sharing information and pooling resources so that they can level the playing field with public officials with whom they are negotiating.**

16) Board of Education officials occasionally made commitments that they did not deliver upon, perhaps because of disorganization or ineffectualness (willful or otherwise), or perhaps because they were promising things over which they had no control.

**Proposal: Parent groups and their consultants need to be ever vigilant to make sure that everything that is promised is delivered upon.**

17) Public officials occasionally made unilateral decisions which appeared to be non-negotiable, making parent groups feel powerless and without options.

**Proposal: If public officials become intransigent, legal challenges, media outreach and political support from nonprofit and other public officials can be an effective way of gaining more leverage.**

18) Schools with active, organized PTAs were more able to defend the needs of their schools and their children than those without. The individuals who served on the PTA boards were in pivotal positions to affect outcomes.

**Proposal: To protect the health and safety of school children, parents need to ensure that the people representing them are committed, competent advocates who can function well under extreme pressure. PTA nominations and elections, often-moribund affairs at many schools, should be elevated in importance and taken seriously.**

19) Schools with actively maintained websites were better able to communicate with their parent body and other

supportive groups than those without. **Proposal: PTAs should make it a priority to have a parent volunteer with computer skills regularly maintain a school website.**

20) Parents and children react to crises differently. In some instances, parents had a far harder time coping than their children, making it difficult for them to set the kind of example they knew was so desperately needed. Those who were able to reestablish routines quickly and reunite with friends and family seemed to find it easier to recover their emotional equilibrium.
**Proposal: Professional counseling should be made available to both parents and children as quickly as possible after a traumatic event to help everyone recover.**

21) No matter what they say, the interests of public agencies such as the Board of Education are not the same as the interests of parents and school administrators.
**Proposal: Parents should not rely solely upon public officials to protect the health and safety of their school children. They need to be actively involved themselves and they need to be prepared to retain independent advisers to support them. In a crisis, support from external groups can often be procured on a pro bono basis.**

22) School administrators, by dint of the fact that the Board of Education is their employer, are constrained in their ability to question or oppose Board of Education policies and decisions.
**Proposal: Parents need to understand that in a crisis of this nature, the burden of leadership and decision-making is on them and their elected PTAs and they should not expect school administrators to take the lead in confronting the Board of Education.**

23) Many environmental and health issues are complex and technical and few parents are as knowledgeable as they need to be on all issues.
**Proposal: Parents should make sure they have all the expert resources they need to have at their disposal. They should also make sure that any consultants they retain are completely independent and aren't compromised by work they do with public agencies. Besides environmental and health experts, schools might also benefit from turning to outside consultants for help with media relations, fundraising, legal counsel, and conflict resolution.**

24) Although September 11 was a tragedy of massive proportions, some good came of it. Because so many schools were closed for lengthy periods of time, it created an opportunity to fix or repair many previously existing problems with the physical plant. When parents are forceful, schools can be returned to use in far better condition than they were before.
**Proposal: Parents and school staff should try to look for ways to find the positive things that can come out of an otherwise tragic situation.**

25) In the aftermath of September 11, the unprecedented level of air testing revealed not only that there were problems in lower Manhattan schools,

but also that background pollution is a serious concern for all schools situated in an urban setting such as New York City. The extensive inspection by engineers and architects of the physical plant of lower Manhattan schools also revealed the extreme inadequacy of those ventilation systems in protecting children from dangerously high levels of air-borne particulates.
Proposal: **All urban schools should have their ventilation systems thoroughly reviewed by experts who understand the special vulnerability of children to environmental hazards. If need be, higher levels of filtration should be installed so that school children are not exposed to disturbingly high levels of contaminants in the air. All newly-constructed schools should be required to be equipped with more sophisticated filtering and ventilation systems so that future students are not exposed to similar health risks.**

26) Constant air-testing in lower Manhattan schools revealed that other events unrelated to September 11, such as painting, plastering, and general cleaning and maintenance could result in excessive levels of particulates polluting the air inside schools.
Proposal: **Repairs and maintenance that will result in air-borne particulates should not be done when schools are in session, and nontoxic cleaning materials should become standard issue in all schools so that children's health is not put at risk.**

27) Just as parents were divided in their assessment of environmental and health threats, so too were teachers. In some cases, UFT representatives were actively involved with their counterparts at other schools, in other cases they were not. Similarly, some principals conferred frequently with their peers at other schools, while others did not.
Proposal: **Teachers and principals can benefit from regular and full exchanges with their counterparts at other schools, gleaning information, insights into strategies for negotiation, and even emotional support.**

28) When consultants for the lower Manhattan schools tried to come up with what they thought were reasonable protocols for testing, and reasonable standards of safety, they realized that there are no useful guidelines for children. Board of Education officials were put in the position of having to estimate what they thought appropriate and relevant standards should be.
Proposal: **Research should be done to help formulate appropriate environmental standards for children in schools.**

29) While nurses and doctors have been installed in the affected lower Manhattan schools, there is no systematic effort being made to keep track of children's health complaints, and where and when they occurred.
Proposal: **A formal tracking system should be implemented at all the lower Manhattan schools to identify patterns that might emerge.**

30) Senator Hillary Clinton has proposed that there be a registry of all lower Manhattan residents and workers who were present in the area on September 11, but no funds have yet been allocated for such an extensive effort.

**Proposal: At a minimum, a registry of all students at the affected lower Manhattan schools should be created that would enable careful and ongoing tracking of their health.**

31) Parents felt that the Board of Education was omnipotent, and that they had no way to seek recourse.
**Proposal: The Board of Education should create an ombudsman's office, which would investigate complaints concerning children's health and safe school environments.**

# Selected Parents' Comments

I took the stance of supporting our teachers. I knew that they needed the most support so that they could pull themselves through for my kid. When we panic about our own needs, we jeopardize the community at large. We had to support the structure. We need to create and look for small rays of hope. We desperately needed to have more community building during our fractured days. We worked together on desperate jobs of lugging boxes, forming committees and complaining, but we never spoke much. We didn't reach out to families who weren't volunteering. What we really needed was to be together, to share stories, to meet each other, and to cry together.
Please help spread the word that the teachers and staff at this school (and others in this neighborhood) are HEROES. They need more public recognition. They have been amazing.

*Parent from P.S. 89*

We must always be aware. We must always be prepared. Counsel your child, age appropriately, to emergency and evacuation procedures. Make sure they have written instructions, identification, numbers on them at all times. Assurance. Assurance. Assurance.

*Parent from P.S. 89*

Given what we know now, I think every school should have, and inform the parents about, an evacuation plan at the beginning of the year. If the internet site could be updated immediately with a special bulletin, that might be the best place to get/give info. Even if you don't have access to it from your home or office, chances are someone does. Also, when the evacuation notice is distributed, parents should be reminded that the most helpful thing they can do is to STAY CALM around the children. I saw many parents (none were teachers, thank God!) running through the hallways, screaming and crying on 9/11. It was very upsetting. My daughter later said that the scariest part of that morning was when parents came running into the classroom screaming "Come on! Come on. Let's go!" I knew exactly what she meant.

*Parent from P.S. 234*

It is absolutely crucial to provide expert counseling to parents immediately. All decisions must be transparent, with room and time for discussion. A safe space with routines needs to be established for the children as soon as possible. Moves should not be made quickly; time is needed for decompression and evaluation. Good leadership is invaluable. Children need to be provided with ways to unload and express their fears/anxieties.... As a community, we are still digesting the trauma daily—many of us are realizing that this kind of tragedy is not forgotten and will become part of the fabric of our lives and neighborhood.

*Parent from P.S. 234*

Use school website: event status, updates, and plan of action. Conduct more/random fire/evacuation drills. Always use an independent eco [environmental] group. "Never trust the Feds!"

*Parent at I.S. 89*

I felt the worst thing was the never-ending and constant scheduling of parents meetings where nothing was accomplished and a lot of parents who were never going to be happy heard a lot of misinformation and the sky is falling attitude. A lot of the parents projected their fears and misinformation onto their children. The kids held up better than their parents.

*Parent from P.S. 150*

1) To keep an emergency and evacuation plan for school and family and distribute it to distant family members too.
2) To mobilize parents more forcefully and strongly and efficiently to get better and more accurate reporting on health, environment, mental health and material needs and share that information more effectively.
3) To immediately get a very experienced large–scale disaster/trauma expert in to talk to and help organize parents, using the school as a base for community rebuilding; to educate the school staff and administrators about the divisive nature of all trauma/disaster on communities; and to provide many more constructive frameworks for pulling people together and informing them than were used by P.S.234 in this situation.
4) Although I co-founded a family support committee in our school, it was difficult to insure better cross-school communication and cooperation on all the above levels as well. I would work harder on that sooner!
5) To get federal and state politicians involved as advocates earlier.

*Parent from P.S. 234*

Kids are much more resilient than parents. Kids don't want to keep talking about it. Kids wanted to go back four months before the parents did. Lesson learned: Get help for the parents. A few really freaked-out parents kept the kids from getting their lives back to normal. Force the parents to face the disaster and move on. Parents cope very differently from the kids; recognize this.

*Parent from P.S. 234*

Children should not be out of school for one week while other students return to normal schedules. Children, teachers and administrators should receive counseling by *trained professionals* as soon as possible after the event.

*Parent from I.S. 89*

Your child's reactions are reflections of yours (the parents). I learned that if I built structure back into my son's life and made him feel as if I had my end under control he was fine. Too many parents expose children to their every emotion: fear, anxiety, anger, worry, etc. The fact is that your child wants you to be their hero. If we can be strong for them, we go a huge distance in establishing their recovery. Save the drama for adults in your life, they know how to handle it.

*Parent from P.S. 234*

Do not depend on the Board of Education to act in the best interest of the children. They will act on a purely political basis, without regard to anybody's well being except their own.

*Parent from P.S. 89*

I learned that the parent body has very little real say. The more savvy, experienced administrators do better for their schools than those less experienced. This worked in our (P.S. 234's) favor. Large meetings full of too many people with too many strongly felt varied opinions are painful to attend.

*Parent from P.S. 234*

Get organized fast. Have strong leadership. Have educated affluent parents who will not be pushed around by the authorities, who always seem to lie and minimize. Of course, catastrophes do not always occur near schools with the socio-economics of P.S. 234.

*Parent of P.S. 234*

If you're close by when disaster strikes, go directly to the school and escort your child out of the school in a calm manner. At all costs, avoid alarming children. Pass this advice to caregivers as well. If the children are upset by grownups reactions, it doesn't matter what the school does or how efficient they are, because a feeling of panic and fear will prevail.

*Parent from P.S. 234*

Kids looked to the adults for guidance. Some adults were screaming and crying out of control which the kids used as their model for behaving. Therefore, the parents should try to be calm or at least appear to be.

*Parent from P.S. 234*

The process of recovering afterward requires excessive and organized involvement of parents to assure that government agencies' actions protect the interests of the children in every way.

*Parent from P.S. 234*

Try to get everyone together as quickly as you can and deal with it as a family. Good friends and relatives with children to be with made it easier for all the children to deal with the situation and kept the parents focused on dealing with family rather than just the event.

*Parent from P.S. 234*

# APPENDIX

# Timeline

***September 11, 2001***

8:46 a.m.—American Airlines flight #11 hits North Tower of World Trade Center

9:03 a.m.—United Airlines flight #175 hits South Tower of World Trade Center

9:30 a.m.—Two high schools south of World Trade Center evacuate

9:59 a.m.—South Tower of World Trade Center collapses

10:15 a.m.—Stuyvesant High School and P.S. 150 evacute

10:20 a.m.—P.S. 89, I.S.89 evacuate

10:25 a.m.—P.S. 234 evacuates

10:29 a.m.—North Tower of World Trade Center collapses

***September 20, 2001***

All displaced schools reopen

***October 9, 2001***

Stuyvesant High School returns to its location

***October 16, 2001***

P.S. 234 is moved to St. Bernard's School; 721M returns to Stuyvesant building.

***October 22, 2001***

P.S. 89 moves to NEST+m

***January 22, 2002***

I.S. 89 returns to its location

***Jan;uary 28, 2002***

High School of Leadership and Public Service returns to its location

***February 4, 2002***

P.S. 234 and P.S. 150 reopen in their locations

***February 28, 2002***

High School of Economics and Leadership and P.S. 89 reopen in their locations

# List of the Major Players

SCHOOLS

**High School of Leadership and Public Service**
Principal: Ada Rosario-Dolch
PA President – Janis Jones

**High School of Economics and Finance**
Principal: Dr. Patrick Burke
PA President – Carol Cantrell

**Stuyvesant High School**
Principal: Stanley Teitel
PA President – Marilena Christodoulou

**P.S.234**
Principal: Anna Switzer
PTA President – George Olsen

**P.S.89**
Principal: Ronnie Najjar
Co-chair, PTA – Angela Benfield

**I.S.89**
Principal: Ellen Foote
Co-chair, PTA – Angela Fremont-Appel
**P.S.150**
Principal: Alyssa Polack
Co-chair, PTA – Deborah Seidman Petti

BOARD OF EDUCATION OFFICIALS
David Klasfeld – Deputy Chancellor
Burton Sacks – Chief executive, External Affairs
Bernard Orlan – Director of Environmental Health and Safety

ENVIRONMENTAL CONSULTANTS
Environ Corp. – Tom Fusillo (represented P.S.234, P.S./I.S.89 and P.S.150)
Emteque Corp. – Eric Telemaque, President

UNITED FEDERATION OF TEACHERS
Chris Proctor, industrial hygienist

MAJOR INTERVIEWS

Although numerous other interviews were held with parents, school administrators and some students, these are the major on-the-record interviews that were conducted for this research project, from January through March 2002. Many of these individuals were interviewed multiple times. PTA meetings were also attended at P.S.89, P.S.234, P.S.150, the High School of Leadership and Public Service and the High School of Economics and Finance.

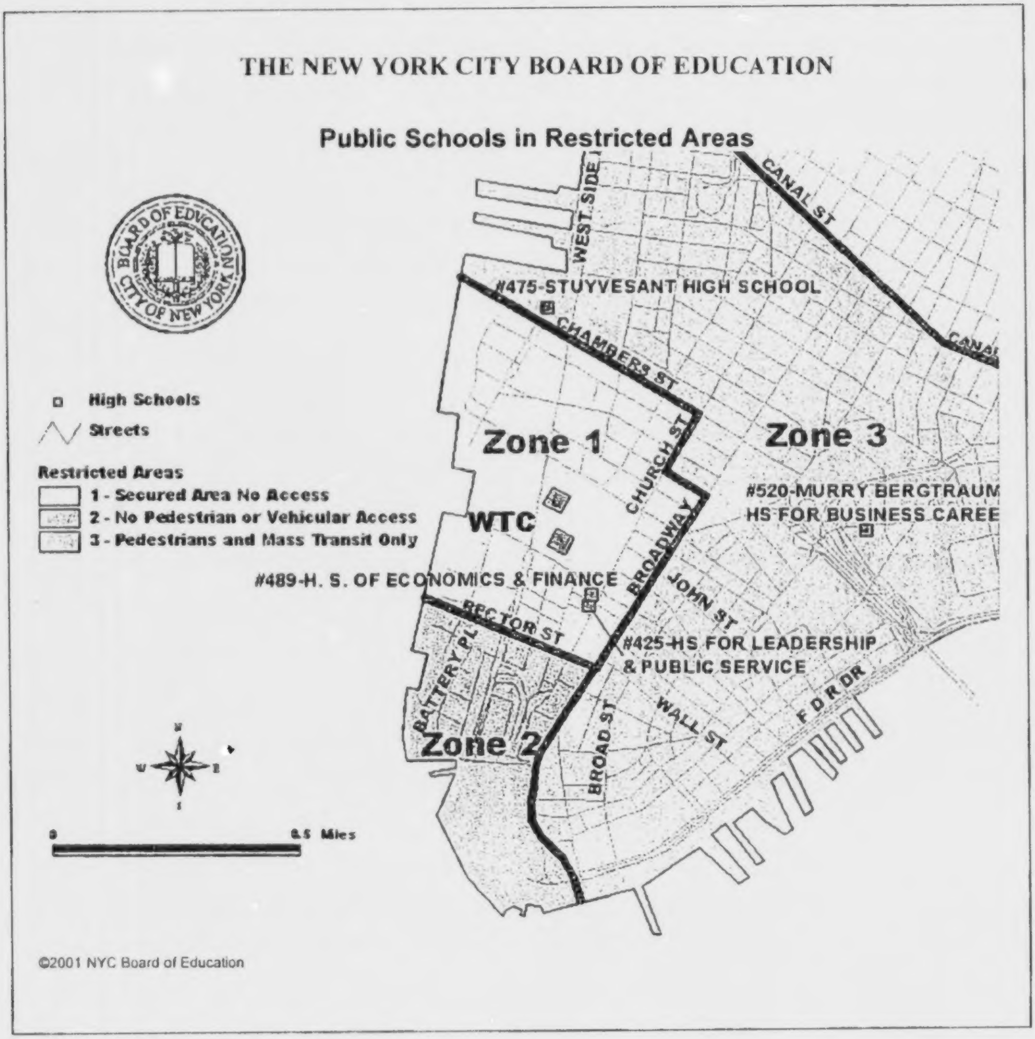
**High School of Leadership and Public Service**
PA President – Janis Jones
Becky Zeng – Student

**High School of Economics and Finance**
PA President – Carol Cantrell

**Stuyvesant High School**
PA President – Marilena Christodoulou
721M Parent - Miriam Badillo
721M School Coordinator – Neal Coffina

**P.S.234**
Principal: Anna Switzer
PTA President – George Olsen
UFT Rep – Francine Cornelius

**P.S.89**
Principal: Ronnie Najjar
Co-chair, PTA – Angela Benfield


THE NEW YORK CITY BOARD OF EDUCATION

Public Schools in Restricted Areas

BOARD OF EDUCATION CITY OF NEW YORK
High Schools
Streets
Restricted Areas
1 - Secured Area No Access
2 - No Pedestrian or Vehicular Access
3 - Pedestrians and Mass Transit Only
0
0.5 Miles
N
W
E
S
WEST SIDE
CANAL ST
CANAL
#475-STUYVESANT HIGH SCHOOL
CHAMBERS ST
CHURCH ST
Zone 1
Zone 3
WTC
BROADWAY
#520-MURRY BERGTRAUM
HS FOR BUSINESS CAREE
#489-H. S. OF ECONOMICS & FINANCE
JOHN ST
RECTOR ST
#425-HS FOR LEADERSHIP
& PUBLIC SERVICE
BATTERY PL
BROAD ST
WALL ST
F D R DR
Zone 2

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# New York State Education Department Advisories on 9/11/01

**THE STATE EDUCATION DEPARTMENT** / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

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PRESIDENT OF THE UNIVERSITY
AND COMMISSIONER OF EDUCATION

September 11, 2001

**To:** District Superintendents
Superintendents of Public and Nonpublic Schools

**From:** Richard P. Mills

**Subject:** Advisory

All schools in our State are currently engaged in coping with events in the wake of this morning's terrorist attacks. Attached are recommendations from SED about managing your schools' response during the balance of the day. I am sure you have considered most of these points already, but I wanted to support your efforts.

Another advisory will be issued before the end of the day today containing additional recommendations for dealing with this on-going crisis in the days ahead.

Enclosures

# Crisis Advisory for Schools

- Follow your district and school crisis plan.
- Preference is to keep schools open. To try to keep life as normal as possible for students.
- Stay as calm as possible. Adults need to be role models for children.
- Encourage communication opportunities in classrooms. Let students/adults talk about their feelings.
- Try to send positive messages to staff that they have the skills to handle this crisis. However, there may be adults who struggle with this task. Make plans to support these staff. (Make use of your own school health services staff.)
- Communicate to students that the adults are doing everything they can to keep students safe. BE VERY HONEST. Do not make promises you cannot keep.
- Be sensitive/accommodate the needs of students, parents, staff (when school is staying open, support parents who choose to keep students home).
- It is important for you to consider sending a message home to parents today. Consider the attached sample message and revise as appropriate.

SAMPLE (To Be Revised as Appropriate)

## Information for Parents

- In order to keep life as normal as possible for students, we encourage you to send your children to school tomorrow. School personnel will be prepared to help your children respond to the feelings that will arise from this catastrophic event.

  When you talk to your children this evening, please reassure them that the teachers and staff at the school will do everything they can to keep them safe.

- Schools will remain open, unless you receive notification from school personnel.

- Emergency closings, if necessary, will be issued through the regular channels, i.e., television and radio.

## Special Advisory for Districts in Counties Adjacent to NYC

Crisis Response Team must coordinate with County Emergency efforts ie; American Red Cross, Health Department, "EMS".

Consider the following:

- Schools may need to stay open 24 hours.
- Maintain an accurate accounting of students in your care.
- Identify staff that can remain at school to supervise and support students.
- Provide for shelter, food, water and other necessities as needed.
- Attempt to contact parents and legal guardians of children not picked up.
- Maintain communication with all media sources

**THE STATE EDUCATION DEPARTMENT** / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

PRESIDENT OF THE UNIVERSITY
AND COMMISSIONER OF EDUCATION

September 11, 2001

**To:** District Superintendents
Superintendents of Public and Nonpublic Schools

**From:** Richard P. Mills

**Subject:** Advisory: Please distribute to superintendents and other school officials

This is my second note to you today. We must give our students as much of a sense of stability as we can. That is why it is important that schools stay open where possible and that schools that are closed reopen as soon as possible.

The following attachments -- in addition to the information I sent to you earlier -- make suggestions about how to cope in the days to come. I am sure you have thought about many of them, and I assure you of our support for your efforts.

The days ahead will be difficult and trying. I am confident that you have the skills and knowledge necessary to help students and staff with the problems that will arise in your communities.

I have faith in your efforts and I am committed to help you in any way I can. All State agencies are coordinating response efforts.

Enclosures

# SECOND ADVISORY FOR SCHOOLS

In the days following the tragic events of Tuesday morning, schools will face a need to deal with the immediate trauma experienced by children and school personnel as well as the need to begin to return the school to a normal routine.

Some effects all schools are likely to need to address in these next days include:

- Fear and sense of vulnerability and insecurity
- Grief over the loss of friends and relatives
- Uncertainty about the security of the country and the possibility of future violence
- Personal needs of children and school personnel whose lives have been directly disrupted by this tragedy
- Disrupted attendance by students and school personnel
- Difficulty in communicating with some members of the school community.

As you respond to these effects, we suggest you:

- Refer to the "Crisis Advisory for Schools" contained in our earlier memo
- Provide emotional support to meet the diverse needs of students and adults
- Contact retired educators, as well as government agencies, to assist schools in providing additional support (counseling, supervision, instruction)
- Provide periodic updates to parents regarding students and the school climate in the aftermath of this week's terrorist attack

- Consult the attached list for additional resources

## Resources

**Many helpful resources are referenced in the document, Project SAVE: Guidance Document for School Safety Planning, pp. 61-92. This document and other helpful information is available on the following web sites:**

- **NYS Education Department** www.nysed.gov
- **NYS Center for School Safety** www. mhric.org/scss
- **NYS Police** www.troopers.state.ny.us/
- **NYS Emergency Management Office - office coordinating all emergency response efforts of State agencies** www.nysemo.state.ny.us

**The document Crisis Counseling Guide to Children and Families in Disasters, produced by the NYS Office of Mental Health, contains important information for school staff and parents about children's reactions to disasters. The web site address for these documents is:** http://www.omh.state.ny.us/omhweb/crisis/crisiscounseling3.html

**You can also find a directory of county mental health agencies at** http://www.omh.state.ny.us/omhweb/aboutomh/county_svcs.html

In Nassau County you may contact a special hotline at (516) 504-HELP (4357).

# New York City Department of Health Bulletins, September 2001

## Press Release

New York City Department of Health
Office of Public Affairs

FOR IMMEDIATE RELEASE
CONTACT: Sandra Mullin
Saturday, September 22, 2001 (212) 447-8232

## NYC HEALTH DEPARTMENT DISTRIBUTES HEALTH RECOMMENDATIONS FOR RESIDENTIAL AND COMMERCIAL REOCCUPATION

Over the course of the past few days, New York City Department of Health (DOH) has been distributing health recommendations to tenants and business owners in Manhattan below Canal Street who are now able to re-enter their apartments and office buildings. Recommendations have also been issued to elected officials and community boards throughout the City. Thus far, over 50,000 copies of DOH recommendations for tenant re-occupancy have been distributed These activities will continue as more people re-occupy residents and workplaces in lower Manhattan.

New York City Health Commissioner Neal L. Cohen, M.D., said "The Health Department is continuing to work with federal, state, and local agencies to assess the safety of neighborhoods affected by the collapse of the World Trade Center buildings. While there are no significant adverse health risks to the general public, residents and business owners who are allowed to return to their buildings should follow Health Department recommendations to minimize exposure to dust and other particulate matter that may cause throat and eye irritation. All residents and business owners should check with their building managers or owners to make sure that their buildings are safe, and have been certified for re-occupancy."

To decrease the possibility of dust inhalation, persons who live or work within the general vicinity of the blast zone - south of Warren Street, west of Broadway, and north of Exchange Street - and who have been approved to resume tenancy, are advised to wear a dust mask while outside. Dust masks are not necessary for residents in other areas. It is unnecessary to wear a mask while inside buildings as long as cleaning procedures outlined below are followed. The complete list of recommendations for re-occupancy and other important public health information are available on DOH's Web site, nyc.gov/health. The Health Department has also established a General Information Line, **(212) 213-1844**, to field questions about DOH services, and to register complaints.

**Health Department Recommendations for Tenant Reoccupation**

- Residents should check with building managers and/or owners to make sure that their buildings have been assessed and certified safe by the City of New York. This includes structural stability; and the safe operation of gas, electrical, water, steam service, heating, ventilation, and air conditioning systems.
- Residents of the affected area are advised to enter the home dressed in long-sleeve shirt and pants

with closed-toe shoes.

- Check for the smell of gas. If the apartment smells of gas, leave immediately and report it to your building manager and Con Edison.
- Check for broken glass and fixtures, wrap any broken glass in paper and mark it "broken glass."
- Tenants are advised to use a wet rag or a mop to remove any dust. Sweeping with a dry broom is not recommended because it may make dust airborne again.
- Where dust is particularly thick tenants are advised to directly wet the dust with water, and remove it in layers with wet rags and mops.
- When done used rags should be put in plastic bags while they are still wet, and bags should be sealed and discarded.
- To reduce dust re-circulation, the Health Department recommends using HEPA (high efficiency particulate air) filtration vacuums when cleaning up apartments, if possible. As an alternative, wetting the dust down with water and removing it with rags and mops is recommended.
- Once situated, residents are advised to avoid sweeping or other outdoor maintenance, keep windows closed, set the air conditioner to re-circulate air (closed vents), and change or clean the filter frequently.
- Run hot and cold water from each of the taps for at least two minutes, or until water runs completely clean.

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*Go to* **Press Release page** || **Public Information page** || **NYC DOH Home page** || **Health Topics** || **General Information & Hotlines** || **Publications**
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·1625·

**New York City Department of Health**
**Responds to the World Trade Center Disaster**

# Recommendations for People Re-Occupying Commercial Buildings and Residents Re-Entering Their Homes

***What steps should I take upon returning to my workplace or home?***
If you were evacuated from a residence or workplace south of Warren Street, west of Broadway, and north of Exchange Street, and have been approved to resume tenancy by your building manager, you are advised to wear a dust mask upon entering this area to decrease the possibility of dust inhalation and throat irritation. Outside these boundaries, masks are not necessary, but may be worn for your own comfort. If there is dust present indoors, it should not be necessary to wear this mask if you follow the cleaning procedures detailed below.

In a workplace, speak to your supervisor to see if there are special startup and cleaning procedure. In very dusty places, clean-up may be necessary before equipment can be restarted. Follow the cleaning procedures discussed below.

In your home, you should first make sure that conditions are safe. You should enter your home dressed in a long sleeve shirt and pants, and with closed shoes. Upon entry:

- Check for the smell of gas. If the apartment smells of gas, leave immediately and report it to your building manager and to Con Edison.
- Check for broken glass and fixtures. Wrap any broken glass in paper and mark it ìbroken glass.î If large pieces of glass are broken, ask your building superintendent for instructions on disposal.
- Run hot and cold water from each of the taps for at least two minutes, or until water runs completely clean.
- Flush toilets until bowls are refilled. For air pressure systems, you may need to flush several times. If there are any problems with the toilet or plumbing system, call a plumber -- do not try to fix the problem yourself.
- Follow the cleaning procedures discussed below.

***I have heard that asbestos was released from the collapse of the World Trade Center. What are the health effects of asbestos?***
Because some asbestos was used in the building of the World Trade Center, City, State, and Federal agencies have been collecting dust, debris, and air samples since the World Trade Center collapse. As expected, some asbestos was found in a few of the dust and debris samples taken from the blast site and individuals working in this area have been advised to take precautions. However, most of the air samples taken have been below levels of concern. Based on the asbestos test results received thus far, there are no significant health risks to occupants in the affected area or to the general public.

In general, asbestos-related lung disease results only from intense asbestos exposure experienced over a period of many years, primarily as a consequence of occupational exposures. The risk of developing an asbestos-related illness following an exposure of short duration, even to high levels, is extremely low.

***What should I do with food left in my apartment?***
The power outage in much of lower Manhattan may have caused refrigerated and frozen food to spoil. Raw or cooked meat, poultry and seafood, milk and milk-containing products, eggs, mayonnaise and creamy dressings, and cooked foods should be thrown out if power was out for two or more hours. Frozen foods that have thawed should be thrown away. Do not re-freeze thawed food.

Throw away any food that may have been contaminated with dust, except for food in cans, jars, or containers with tight-fitting lids. Wash cans and jars with water and wipe it clean. When it comes to food left in your building, if in doubt, throw it out.

***How should I clean the dust in my apartment when I move back in?***
The best way to remove dust is to use a wet rag or wet mop. Sweeping with a dry broom is not recommended because it can make dust airborne again. Where dust is thick, you can directly wet the dust with water, and remove it with wet rags and mops. Dirty rags can be rinsed under running water, being careful to not leave dust in the sink to dry. When done, used rags and mops should be put in plastic bags while they are still wet and bags should be sealed and discarded. Cloth rags should be washed separately from other laundry. Wash heavily soiled or dusty clothing or linens twice. Remove lint from washing machines and filters in the dryers with each laundry load. Rags should not be allowed to dry out before bagging and disposal or washing.

To reduce dust recirculation, the Health Department recommends using HEPA (high efficiency particulate air) filtration vacuums when cleaning up apartments, if possible. If a HEPA vacuum is not available, it is recommended that either HEPA bags or dust allergen bags be used with your regular vacuum. If these options are not available, wetting down the dust and removing it as described above is recommended.

Carpets and upholstery can be shampooed and then vacuumed.

- If your apartment is very dusty, you should wash or HEPA vacuum your curtains. If curtains need to be taken down, take them down slowly to keep dust from circulating in the air.
- To clean plants, rinse leaves with water. Pets can be washed with running water from a hose or faucet; their paws should be wiped to avoid tracking dust inside the home.

***How can I remove dust from the air?***
Air purifiers may help reduce indoor dust levels. HEPA air purifiers are superior to other models in filtering the smallest particles. Air purifiers are only useful for removing dust from the air. They will not remove dust already deposited on floors, shelves, upholstery or rugs. Keep windows closed when using an air purifier.

Additional recommendations include:

- Keep outdoor dust from entering the home;
- Keep windows closed;
- Set the air conditioner to re-circulate air (closed vents), and clean or change the filter frequently;
- Remove shoes before entering the home for several days (once you first make sure there is no broken glass)
- Avoid sweeping or other outdoor maintenance.

For more information, call the Health Departmentís General Information Line at (212) 213 - 1844.

# New York State United Teachers News, 9/26/01

**New York Teacher** SPECIAL REPORT
The official publication of New York State United Teachers

New York Teacher | NYSUT.org

September 26, 2001

## Our heroes

*Risking their own lives, teachers and staff keep students safe*

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*UFT President Randi Weingarten, at right in red, and American Federation of Teachers President Sandra Feldman, far left, meet at PS 41 with teachers and staff from PS 234 who guided students to safety.*

George Olsen, a strapping ex-Marine who thought he had seen it all in the hell and heroism of Vietnam, searched for words to express his admiration for the New York City teachers and principal who led his child through smoky, debris-filled streets to safety on Sept. 11.

"I was a United States Marine platoon commander in Vietnam," said Olsen, now PTA president at PS 234, "and I want to tell you - you guys were unbelievable."

The whole world agreed.

In a week of unprecedented catastrophe, New York City teachers and school staff were universally recognized for their "silent heroism" in leading children to safety and helping them cope with the trauma of attacks that many witnessed from their classroom windows. President Bush offered the thanks of a grateful nation; The New York Times and the New York Post joined the chorus of praise.

"It's a tribute to all of you that every single child, every single child, got out safely," United Federation of Teachers President Randi Weingarten told members.

"It's your untold story."

Nine schools in lower Manhattan had to be evacuated; students in many other schools witnessed the disaster.

At PS 42, Virginia Eng's class of fourth-graders, intent on studying English as a second language, saw the attack. "One student asked why Superman didn't come and help to hold up the building," Eng said.

Other accounts are just as heart-wrenching: . "When we came out, it was like a great monster moving toward us - a great cloud of smoke and debris."

. "It was the child I was carrying piggyback that kept me grounded. Then I realized that this is not just for me."

In an emotional week of visits to schools now housing displaced teachers and students, Weingarten and other UFT leaders told teachers the union would do everything in its power to assist them in the days ahead. When Weingarten asked each group how the union could help, the answer was unanimous: "Get us back to our schools."

The 460,000 fellow members of New York State United Teachers have pledged their solidarity and support in that effort, said President Tom Hobart, including the creation of a NYSUT 9-11 Disaster Relief Fund (See story on page 2).

In the hours after the attack on the World Trade Center, public school teachers walked - and sometimes carried - terrified grade-school children through a scene from Dante's Inferno to safety. Some of them were new teachers only four days at their jobs who hadn't even experienced a fire drill.

"We didn't know what was going on," one UFT member said. "Was it safer inside or outside? We moved the kids from the cafeteria to the gym to the basement.

How do you make a decision about something you've never experienced before? But we trusted each other and what we did is a tribute to everybody."

At PS 89, teacher James Herlihy kept kids quiet and shouted, "Keep moving!" even as the second tower in the shadow of their school crumbled almost before their eyes.

"We all just did our jobs," Herlihy said. Then, in a rare light moment, he added that the junior high school kids fully recognized how serious things were because "when I yelled for quiet in the cafeteria, it was quiet. And that never happens."

At PS 1 on Henry Street, "kids were out in the yard and we are in direct sight of the World Trade Center," said school librarian Roberta Grabler, a UFT chapter leader at the school. "All the kids out there saw the first plane hit."

At the Sun Yat Sen School on Hester Street, IS 131, paraprofessional Marion Thom was helping to register new students who spoke only Chinese."We heard this big noise, but we just went about our business. And then later we felt the vibration, and somebody came in and told us a plane had crashed into the World Trade Center."

The smoke could be seen 5 miles uptown, where Anthony Harmon was teaching computer illustration on the fifth floor of the High School of Graphic Communication Arts on 49th Street. "We thought it was just a fire because we didn't see the impact," Harmon said. "Through different windows all day, kids watched what happened.

Some got very upset because their parents work down there."

PS 234 Principal Anna Switzer described teachers playing games with their classes to keep them calm and focused as they moved to positions of safety in the building before evacuating.

A student teacher stayed until 6 p.m. - serene, collected and helpful - in a scene that was repeated hundreds of times by educators who made sure every one of the 1 million kids in the largest school system in the world was safe.

NYC Schools Chancellor Harold Levy, in visits to the schools, spoke of teachers as "selfless and extraordinary ... walking children to safety ... risking their own lives."

For Thom at IS 131, the skyline out her window is forever changed. Gone are the twin towers. In the aftermath, there was smoke, a bad smell and an eerie silence. "We're right next to the Manhattan Bridge. I can't see it, but you could always hear the traffic," Thom said. "Now, there are no cars, nothing except when a cavalcade of trucks or emergency vehicles come through."

Stuck in a virtual ghost town, Thom went back Sept. 12 to her school, which was being used as a Red Cross shelter. "None of the volunteers had any hot food, so I made sure they got a hot meal," Thom said. "You see a lot of people pitching in wherever they can."

What keeps her going are all the kindnesses, large and small: people donating water, putting up signs of support, offering to help others buy groceries.

Sept. 17 - the first day back at school - was a difficult day for Grabler. "Everyone was anxious to get back with their kids, to see if everyone is all right," she said. "As adults we needed to talk with each other. We have colleagues who lost friends. We need to be together to get through this."

- Betsy Sandberg and Dorothy Callaci

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## 'Run to the water'

On Sept. 11, teacher Portia Siddiq-Bilal arrived at her subway stop at 7:45 a.m., ready for a day of work at the High School of Economics and Finance on Trinity Place, a block from the twin towers.

But it soon became a day like no other. A plane smashed into one of the World Trade Center towers. Then came the second plane, and 750 students and 50 staffers at the high school realized it was no accident.

After an orderly evacuation, Siddiq-Bilal recalled, "an avalanche of gray, sooty smoke rolled like a volcano, down the street, straight in our direction. We bellowed to the students, 'Run to the water, to the water, to the water!'"

Jumping over fences and benches, students headed for the river. "We all made it," she said. "Assistant principal Eric Gernant directed some people to a garage for safety."

Students saw victims jumping out of windows. They listened to radios and made calls on cell phones. "The debris and smoke engulfed us," Siddiq-Bilal said. "We put handkerchiefs, tissues, jackets, T-shirts, whatever we had, over our mouths and noses. A student needed help getting away and two other students helped carry that student out." School staff directed students out of harm's way.

"Some teachers and students hopped ferries and tugboats away from Lower Manhattan, away from this devastation and destruction and seemingly never-ending smoke," Siddiq-Bilal continued. "Other staff and students climbed over the highway embankment and literally walked up FDR Drive North. We were part of a mass exodus out of this hellish situation.

"We caught up with more students and staff ... We walked up the FDR Drive to the Brooklyn Bridge. Some men from the Fulton Fish Market let us use their water hose to drink and hose down our sooty faces and hands. Then many students and staff walked across the Brooklyn Bridge. The remainder of us kept walking north, trying to go home and away from all this smoke, dust and debris."

At day's end, Siddiq-Bilal left the school group and walked north toward home. She got a drink from a group of helpful people. She found a clean restroom where she could brush off the gray silky dust from her clothing and perform ablution, a Muslim ritual of washing before prayer. "I felt better after that," she said. "I was tired, my throat was scratchy, my nose was running, but I was going home!"

Siddiq-Bilal felt she had a lot to thank God for: "For my part in helping the evacuation. For keeping me and others calm and focused. For being alive. For students and co-workers being alive. For surviving the World Trade Center attack.

"I walked, I prayed, I thanked God and eventually I cried."

- Ellie Spielberg

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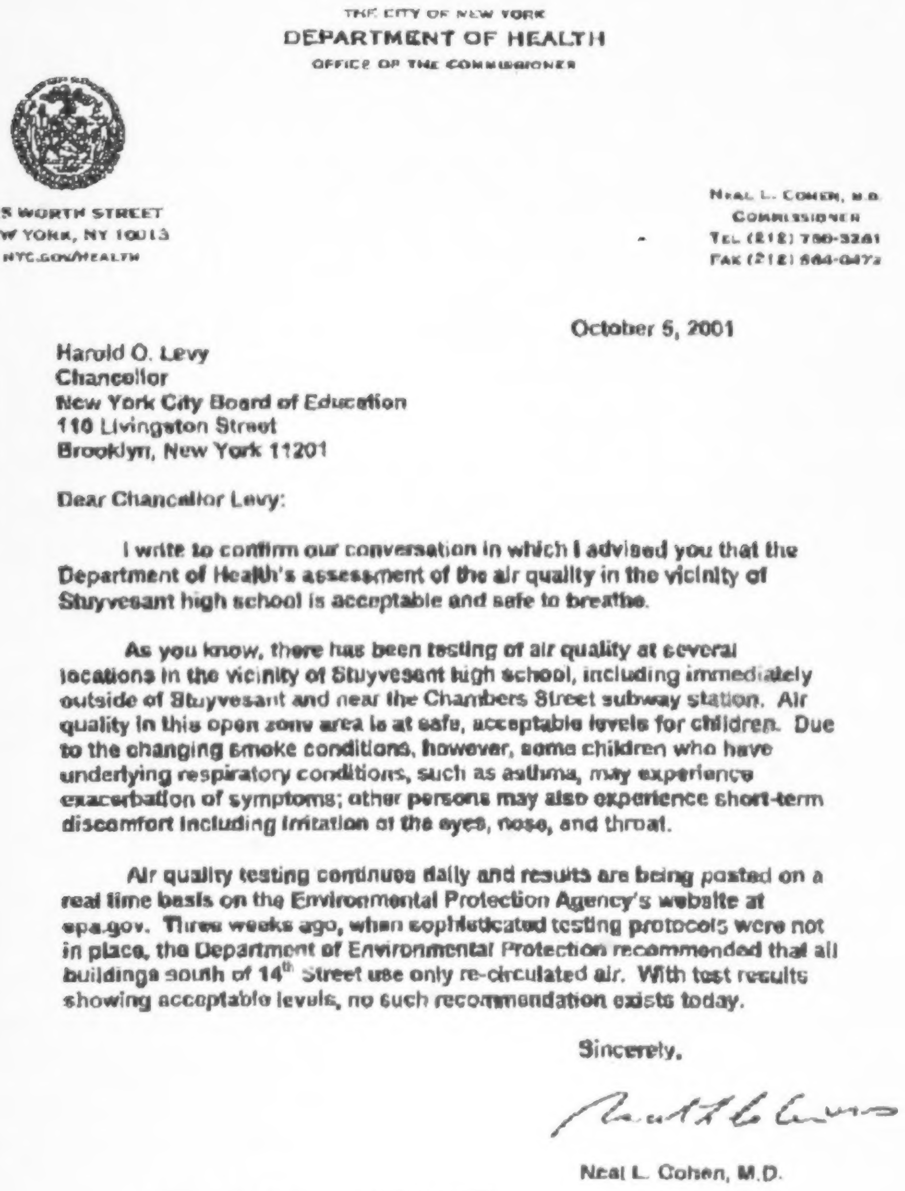
# New York City Department of Health Letter to NYC Chancellor on Air Quality Testing, 10/5/01



THE CITY OF NEW YORK
DEPARTMENT OF HEALTH
OFFICE OF THE COMMISSIONER

125 WORTH STREET
NEW YORK, NY 10013
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NEAL L. COHEN, M.D.
COMMISSIONER
TEL (212) 780-3261
FAX (212) 664-0472

October 5, 2001

Harold O. Levy
Chancellor
New York City Board of Education
110 Livingston Street
Brooklyn, New York 11201

Dear Chancellor Levy:

I write to confirm our conversation in which I advised you that the Department of Health's assessment of the air quality in the vicinity of Stuyvesant high school is acceptable and safe to breathe.

As you know, there has been testing of air quality at several locations in the vicinity of Stuyvesant high school, including immediately outside of Stuyvesant and near the Chambers Street subway station. Air quality in this open zone area is at safe, acceptable levels for children. Due to the changing smoke conditions, however, some children who have underlying respiratory conditions, such as asthma, may experience exacerbation of symptoms; other persons may also experience short-term discomfort including irritation of the eyes, nose, and throat.

Air quality testing continues daily and results are being posted on a real time basis on the Environmental Protection Agency's website at epa.gov. Three weeks ago, when sophisticated testing protocols were not in place, the Department of Environmental Protection recommended that all buildings south of 14th Street use only re-circulated air. With test results showing acceptable levels, no such recommendation exists today.

Sincerely,

Neal L. Cohen, M.D.

# Public Hearing Testimony

**STATEMENT OF MARILENA CHRISTODOULOU**
**President, Stuyvesant High School Parents' Association**
**November 15, 2001**

I will address the Board of Education's (BOE) response to the September 11 tragedy in three areas: the evacuation of the students from Stuyvesant High School; the school's temporary relocation to Brooklyn Technical High School; and the return to Stuyvesant with the related environmental issues.

1. **Evacuation:**

On September 11, the Stuyvesant students (including my own son) watched in horror from their classroom windows as the planes hit the World Trade Center. As the first tower collapsed, the students felt their own building shake, and the lights went out. The street in front of Stuyvesant's south side filled up with smoke, soot and debris. The students should have been evacuated at once. Instead, they were told to leave their third period classrooms and return to their homerooms. Some kids were sent up as high as the tenth floor, which should never be done in cases of fire. At approximately 10:30am, as the second tower was collapsing, federal officials stepped in and ordered an evacuation. The students were instructed to go north and not go home. Although our Principal and Assistant Principals instructed students to stay with their teachers, in the ensuing turmoil very few did. The students were not instructed to gather at a central place, nor was there any attempt made to enable them to contact their parents.

We understand that the decision to keep the children inside the school for so long was made by the Manhattan High School Superintendent, who instructed our Principal accordingly. Although the school was evacuated at about 10:30am, as late as 11:30am the Superintendent's Office, the emergency hotline at BOE, the TV and radio stations were advising parents that their children were being kept in the school, and that they would only be released to the custody of their parents. It was, of course, impossible for parents to get to Stuyvesant.

It is my opinion that the way BOE conducted our school's evacuation was unsafe, and it was only a matter of luck that none of our students was injured. Going forward, we are now concerned about our school's evacuation plan in case of other emergencies, as the egress north of our school is now blocked by an OEM-operated barge operation located immediately north of the school on Pier 25.

2. **Relocation to Brooklyn Technical High School (BTHS):**

Our children did not go back to school until September 20. Although they had seen this tragedy first-hand, BOE did not make any counseling services available to them until the following Monday, September 17, and then only as the result of the Parents' Association (PA) insistence.

In spite of our request that the PA Executive Board be involved in the decision about the temporary relocation of the school, we were not consulted in any way. On September 14, Deputy Chancellor Klasfeld informed me that we would relocate to BTHS starting September 20. We then learned that, instead of the split schedule that had been represented to us (BTHS in the morning, Stuyvesant in afternoon), there would be four overlap periods during which both student bodies would share the BTHS building. During each of those four periods, between 50% to 95% of Stuyvesant would have no classrooms. Up to 40 classes (1400 students) would be conducted simultaneously in the auditorium. These conditions during the overlap periods raised serious safety and educational concerns for both the Stuyvesant and BTHS student bodies. We did not feel confident that 8,000 students and faculty could be safely evacuated from the building in the event of another emergency.

As a result of the parents' efforts, this arrangement was never implemented. Instead, a split schedule was put into effect. However, the academic period for Stuyvesant students was reduced from 43 to 26 minutes (and from 43 to 37 minutes for BTHS students). It is the PA's belief that the short instruction time allocated to the Stuyvesant students was of little academic value.

### 3. Return to Stuyvesant:

The goal of the PA has been to ensure the return to Stuyvesant as soon as possible, but only when the building was safe for occupancy. Although the return date was imposed without PA consent, we were gratified that BOE recovered the school on a timely basis. Also, BOE should be commended for conducting a full asbestos abatement of the building.

As a parent, I was somewhat concerned that the return to school may have occurred prematurely, but I was encouraged by the fact that BOE's cleanup should have taken care of not only asbestos but all other particulate contaminants. As a result of negotiations with the PA, the BOE agreed to a series of measures, which when implemented, should serve to protect the school against further contamination from the outside. Also, BOE agreed that continuous monitoring for several contaminants would be conducted inside and outside the school.

Since the return on Oct 9, four factors have combined to call into question whether our children are being adequately protected from exposure to airborne contaminants that have potential adverse health effects:

- **1st factor**: Despite agreements, the BOE has yet to implement many of its promised protective measures in and around the school. For example:
    - It did not inspect or clean ventilation system ductwork prior to the return to school, or since.
    - It has not installed higher efficiency filters for the 300 classroom unit ventilators.
    - The BOE has not engaged a professional engineering firm to evaluate the possibility of retrofitting the HVAC system to enable it to utilize HEPA filters.

  - Despite statements that the BOE met with representatives of Battery Park City, the bridge to the school is still not being wet cleaned and HEPA-vacuumed with adequate frequency.
  - The BOE has not been effective in getting appropriate protective measures implemented to control dust from the barge & truck operations adjacent to the school, and has not been effective in helping to relocate such operations.
  - BOE has not come up with an acceptable Contingency Plan in the event that environmental monitoring results indicate that the school is not safe for occupancy for any period of time. BOE has informed us that, in such a circumstance, we would return to the academically unacceptable situation at BTHS.
- **2nd factor**: A number of students and faculty have reported and exhibited clinically diagnosable symptoms of illness like rashes, nosebleeds, and upper respiratory problems (coughing, sore throats, sinusitis, etc.).
- **3rd factor**: BOE air monitoring inside the school has indicated on one occasion, an elevated level of lead, and regularly on 12 occasions between Oct. 17 & Nov. 8, scores of measurements of respirable particulate matter at levels exceeding regulatory limits. These readings indicate that outside contaminants with the potential for adverse health effects are entering the school in concentrations that are of concern.
- Finally, **4th factor**: Data obtained from EPA under the FOIA by environmental activists indicate the publicly released data did not accurately characterize the full range of environmental sampling results at and around ground zero. Specifically, the data show more frequent and higher measurements of asbestos, heavy metals, PCBs, dioxin, benzene, and other toxic substances than were previously acknowledged.

In summary, these developments call into question BOE's unequivocal assurances about the safety of our children.

The PA has been, and continues to request, that BOE take immmediate action to:

i. Engage an Engineering Firm to evaluate a modification of the HVAC system to enable it to utilize HEPA filters.
ii. Implement all cleaning measures inside and outside the school, as often as necessary, especially the cleaning of the bridge, and the cleaning of the ducts.
iii. Develop an academically acceptable Contingency Plan.
iv. Take action to cause the City to relocate the truck and barge operation on Pier 25, and implement the appropriate protective protocols.

In conclusion, although BOE's intentions appear consistent with the ongoing health and safety objectives of the school, BOE's failure to execute in a prompt and effective manner has created a potential public health problem in our school, which must be remedied immediately.

HEALTHY SCHOOLS NETWORK, INC.
773 Madison Avenue
Albany, NY 12208
518-462-0632
www.healthyschools.org
Claire L. Barnett, Executive Director

120 Wall Street, 16th Fl
NY, NY 10005
212-482-0204

New York State Assembly Committee on Environmental Conservation
Public Hearing Testimony: Air Quality and WTC, Monday, November 26, 2001

Thank you for the opportunity to provide comments. First, we want to offer our profound sympathies to those who have suffered in the terrible events of September 11th, and to offer our thanks to the visible and invisible heroes who have left their marks on so many lives since.

We note that not only did school personnel in lower Manhattan heroically lead more than 8,000 children to safety on 9-11 without one child lost or seriously injured, but students and schools are today doggedly forging ahead.

But there are lessons learned that should inform the creation of new state policies to prevent and address further environmental health impacts.

Today, the New York City of Education is revising its own Emergency Management Plan based on early lessons learned. This is a process that we encourage you to watch carefully for consistency with state standards and federal recommendations.

Sadly, unlike private enterprises immediately after the disasters, children and schools have only two choices before them-- either reoccupy schools in the impact zone or double-shift in already overcrowded schools. At the same time, just to maintain productivity in the economy, private enterprises from the impact area are routinely offered relocation grants and alternative office spaces.

Children deserve healthy choices. Just as children are not biologically just little adults, schools are not just 'little offices'. Schools are densely occupied by children who are required to be there and who are uniquely vulnerable to environmental hazards. Schools are normally hard to keep clean; maintenance is always underfunded. Schools have almost no flexibility with scheduling once open, and children who miss too many days of school will have difficulty keeping up, or may not have enough 'seat
time' to finish the year. Children with asthma, allergies, compromised immune systems, or other health and learning issues are often the first affected by adverse environmental conditions, including serious overcrowding, dust, fumes, debris, molds, noise, poor ventilation, particulates, etc.

Regardless of how they are affected, students are still required to attend school and take standardized tests. They can't call in sick and send in a 'sub', and, unlike busy downtown professionals, they can't decide to work at home for the afternoon when the wind blows fumes in their direction. In the hopes of at least 'stabilizing' -- if not normalizing -- the lives of children and their families, we urge that:

School emergency management plans require plans for long-term relocation
Funds be immediately allocated to provide appropriate, alternative educational spaces as needed to all dislocated students;
Schools that are reoccupied be provided with supplementary custodial assistance and that less-toxic cleaning supplies be used;
Student health be monitored daily and students with pre-existing asthma or other environmentally-triggered symptoms have 504 Plans in place;
Appropriate routine clean-up protocols be in place in occupied schools as long as the WTC site is emitting noxious fumes and particulates;
No school at or near Ground Zero be re-occupied unless adequate supply of fresh, clean air can be provided inside and the other conditions can be met and monitored;
The state health department be required to respond and to track all student health or learning problems attributable to impact area environmental conditions.

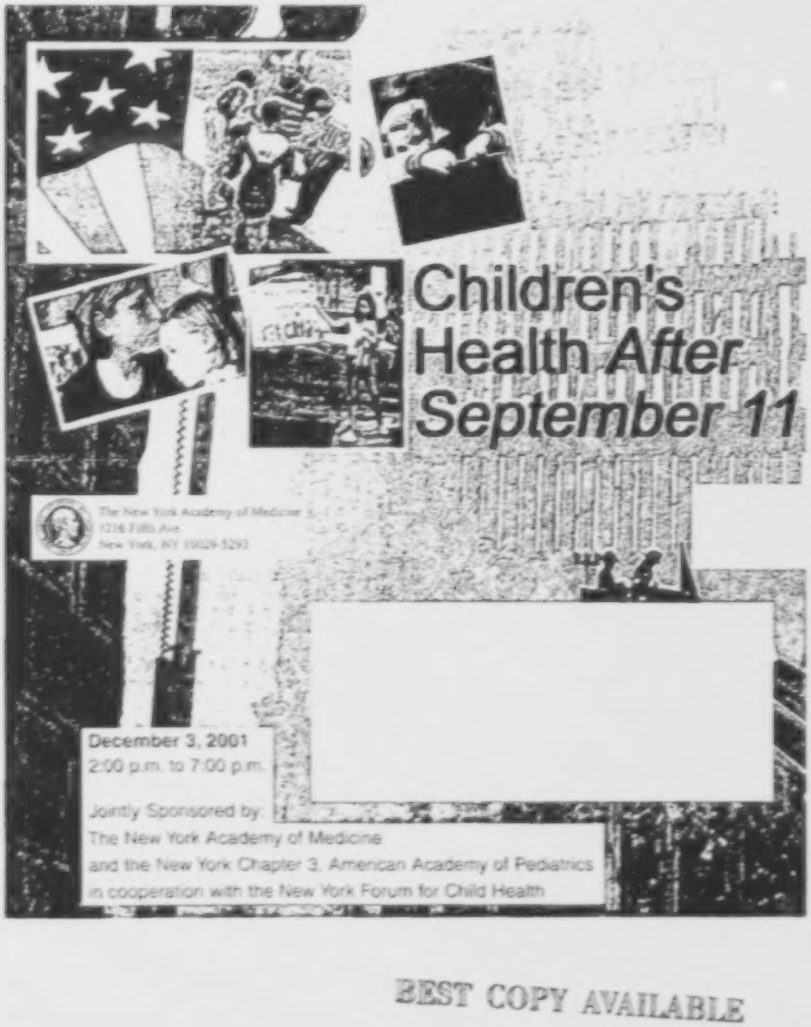
Finally, among the now-evident short-comings at the state level are the grossly inadequate staffing levels at the NYS Department of Health for dealing with the health effects of the WTC and anthrax environmental impacts, just as before September 11th, the Department of Health was not sufficiently staffed to respond or to provide training to local departments of health on other environmental health issues, such as mold contaminated schools. Just as workers on the job have 'occupational health' standards and recourses (at understaffed clinics), it is now clear that students also have 'occupational health' exposures at school. But 'student' is not an occupation for Pre-K through 12, thus there is no system to protect them or to respond to their environmental health complaints.

We encourage this Committee to explore the issues surrounding child environmental health protections in collaboration with the Assembly's Health Committee, and with the Toxics Commission that has raised these issues for the last several years.

# New York Academy of Medicine Conference, "Child Health After September 11"

Agenda and Handouts, including "Ground Zero Elected Officials Task Force" Advisory on Reducing Pollutants

*(HSN note: most schools have difficulty complying with this advice)*



## Children's Health After *September 11*

The New York Academy of Medicine
1216 Fifth Ave.
New York, NY 10029-5293

**December 3, 2001**
2:00 p.m. to 7:00 p.m.

Jointly Sponsored by:
The New York Academy of Medicine
and the New York Chapter 3, American Academy of Pediatrics
in cooperation with the New York Forum for Child Health

# CHILDREN'S HEALTH
# *AFTER SEPTEMBER 11*

**Course Objectives**: To enhance the knowledge and skills of pediatricians and other health professionals in order to identify signs and symptoms that may be related to severe trauma, PTSD, and other medical conditions associated with the events of 9-11. To provide resource information to facilitate appropriate consultation and referral when indicated. The program will provide practical tools to assist pediatricians and other health professionals with current medical concerns.

**PROGRAM**

2:00 p.m. Introductions - *Alan R. Fleischman, M.D., Senior Vice President, The New York Academy of Medicine, and Danielle Laraque, M.D., President, New York Chapter 3, American Academy of Pediatrics*

2:05 p.m. **Mental Health Concerns Panel** - Moderator: *Danielle Laraque, M.D.*
- ✓ An overview of the impact of trauma on children - *Claude Chemtob, Ph.D*
- ✓ What should we tell the children - counseling families - *Steven Shelov, M.D*
- ✓ School health services and education - *Terry Marx, M.D*

4:00 p.m. Intermission (refreshments served)

4:30 p.m. **Medical Concerns Panel** - Moderator: *Alan R. Fleischman, M.D.*
- ✓ Environmental health - *Philip Landrigan, M.D*
- ✓ Chronic illness in children - Asthma - *Jean Ford, M.D*
- ✓ Adolescents and substance use - *Susan Coupey, M.D*

5:30 p.m. **Looking to the Future Panel** - Moderator: *Irwin Redlener, M.D*
- ✓ National child health policy post September 11 - *Irwin Redlener, M.D*
- ✓ Bioterrorism - impact on children - *Annie Fine, M.D*
- ✓ Teaching tolerance and respect for differences - *Eric Jolly, Ph.D.*

6:30 p.m. Conference Adjourns - Reception (wine & cheese)

## PROGRAM FACULTY:

**Claude M. Chemtob, Ph.D.**, Saul Z. Cohen Chair, Jewish Board of Family and Children's Services; Director, Stress Disorders Laboratory, National Center for PTSD, Honolulu, Hawaii; Clinical Professor of Psychiatry and Pediatrics, Mount Sinai School of Medicine

**Susan Coupey, M.D.**, Division of Adolescent Medicine, Department of Pediatrics, Montefiore Medical Center, New York, NY

**Annie Fine, M.D.**, Assistant Medical Director, Bureau of Communicable Diseases, New York City Department of Health, New York, NY

**Alan R. Fleischman, M.D.**, Senior Vice President, The New York Academy of Medicine; Clinical Professor of Pediatrics and Clinical Professor of Epidemiology and Social Medicine, Albert Einstein College of Medicine, New York, NY

**Jean G. Ford, M.D.**, Director, The Harlem Lung Center; Florence Irving Assistant Professor of Medicine, Columbia University, New York, NY

**Eric Jolly, Ph.D.**, Senior Scientist and Vice President, Education Development Center, Newton, MA

**Philip Landrigan, M.D.**, Chairman of Community Medicine, Mt. Sinai School of Medicine, New York, NY

**Danielle Laraque, M.D.**, President, New York Chapter 3, American Academy of Pediatrics; Chief, Division of General Pediatrics, Mt. Sinai Hospital; Debra and Leon Black Professor of Pediatrics

**Terry Marx, M.D.**, Chief Physician, New York City Board of Education, Brooklyn, NY

**Irwin Redlener, M.D.**, President, The Children's Health Fund, New York, NY

**Steven Shelov, M.D.**, Chairman, Department of Pediatrics, Maimonides Medical Center, Brooklyn, NY

**Location:** The New York Academy of Medicine
1216 Fifth Avenue (@ 103rd Street)
New York, New York 10029-5293

**Tuition:** There is **no fee** for this course. However, in these unusual times, we ask that everyone pre-register to allow us the opportunity to provide badges that must be worn during the program.

**For Information** Contact the Office of Education & Conference Center - 212-822-7273 or 212-822-7235

**3 EASY WAYS TO REGISTER**

| | | |
|---|---|---|
| **ON LINE** | **FAX** | **MAIL** |
| **www.nyam.org/events/registration.shtml** | **212-987-4735** | **clip form below, complete & mail** |

**REGISTRATION**

Complete and Return to:

The New York Academy of Medicine
Office of Education and Conference Center (Room 456)
1216 Fifth Avenue
New York, NY 10029-5293

(PLEASE PRINT CLEARLY)

Enclosed is my registration for "**Children's Health After September 11**" scheduled for December 3, 2001 beginning at 2:00 p.m.

NAME ______________________ TITLE ______________________

Hospital/Office Affiliation ______________________

Address ______________________ Dept ______________________

City ______________ St ______ Zip ________ Tel ______________

Fax ______________ E-mail ______________________

# GROUND ZERO ELECTED OFFICIALS TASK FORCE

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Council Member **KATHRYN FREED**
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**COMMUNITY BOARD 1**

## Steps You Can Take to Reduce Your Exposure to Air Pollutants from The World Trade Center Site

According to air testing done by the US Environmental Protection Agency, levels of asbestos and other toxins in the air are generally low. Still, these exposures can be very irritating, especially for people with asthma and other respiratory diseases. And the possible long-term effects on children's health are not fully understood. But there are practical steps that you can take to reduce your and your family's exposure:

- **Limit the amount of time you spend out of doors near the WTC site.**
- **Limit vigorous outdoor exercise and vigorous play by children in the affected area. Both increase the rate of breathing.**
- **For ongoing clean-up, use a HEPA vacuum (they can be rented) and a damp mop or rag on floors, walls and furniture to clean your apartment. Brooms stir up dust.**
- **Be sure all air-handling systems in your building are properly cleaned.**
- **Frequently change filters on air conditioners and other ventilation equipment, and run air conditioners on 'recirculate' with vents closed.**
- **Use HEPA air filters at home or in the office.**
- **Keep windows closed.**
- **Take your shoes off at the door.**

**THE BOTTOM LINE IS PRUDENT AVOIDANCE OF EXPOSURE TO DUST AND FUMES**

*The above information is provided courtesy of the Ground Zero Task Force by Philip J. Landrigan, M.D., Chairman and Professor, Department of Community and Preventive Medicine, Mt. Sinai School of Medicine.*

# Practical Advice for Families with Children Who Live in Lower Manhattan near the WTC Site

*From the Mount Sinai Pediatric Environmental Health Specialty Unit, available for consultation at: (212) 241-0938 or (866) 266-6201

- Because the possible long-term effects on children's health are not fully understood the bottom line is **PRUDENT AVOIDANCE** of exposure to dust and fumes.

- For ongoing clean-up, use a HEPA vacuum (they can be rented) and a damp mop or rag on floors, walls, and furniture to clean your apartment. Brooms stir up dust.
- Be sure all air-handling systems in your building are properly cleaned
- Frequently change filters on air conditioners and other ventilation equipment, and run air conditioners on 'recirculate' with vents closed.
- Use HEPA air filters at home or in the office.
- Keep windows closed.
- Take your shoes off at the door

- While the clean up is ongoing the outdoor environmental conditions are in flux.
- Dust will be spread through the debris removal operation despite efforts to control this.
- Fires, smoke, and emissions are likely to rise and fall unpredictably.
- Use your nose as a guide.

- For practical purposes, treat this like a **Smog Alert** day.
- Limit the amount of time you spend out of doors near the WTC site.
- Limit vigorous outdoor exercise and vigorous play by children in the affected area. Both increase the rate of breathing.
- It may be prudent to avoid bringing young children to playgrounds in lower Manhattan.

**Web Resources:**

**AAP Chapter 3:** http://www.aapnychap3.org/
**EPA :** http://www.epa.gov
**NYC DOH:** http://www.ci.nyc.ny.us/html/doh/html/alerts/911.html

# For Parents
# Talking to Children about Disasters*

## WHAT TO SAY TO YOUR CHILD:

- ☐ It is important to explain things about the disaster in words that your child understands
- ☐ Allow your child to tell you how they feel
- ☐ Allow your child to tell you what they understand about the disaster
- ☐ Let your child know that they are safe
- ☐ Let your child know that you (and other adults in their lives) are there to LISTEN and to answer questions
- ☐ Let your child know that their feelings about the disaster are normal
- ☐ You CAN share your concerns about the disaster with your child
- ☐ Children and adolescents should not watch the events on television alone
- ☐ It is unwise to let children or adolescents view scenes of the disaster over and over again
- ☐ Let your child know that you and they will find ways to cope with the disaster

## WHAT YOUR CHILD MAY EXPERIENCE:

- ☐ A child's age affects how the child will respond to the disaster
- ☐ Many children will need to talk to parents, teachers, and guidance counselors, and most will be able to cope with what they have experienced
- ☐ Some children will not want to talk a lot about the disaster
- ☐ Parents should be alert to changes in a child's behavior:
    - ○ Not wanting to return to school
    - ○ Clinging behavior, not wanting to leave the parents' side
    - ○ Fears about separation from parents/guardians
    - ○ Problems sleeping such as nightmares, screaming during sleep, or bedwetting
    - ○ Not being able to concentrate
    - ○ Being grumpy, irritable or jumpy
    - ○ A change in behavior such as misbehaving in school or home
    - ○ Physical complaints such as stomachaches, headaches, dizziness
    - ○ Feeling sad and not wanting to play with friends
- ☐ Several weeks after the experience of the disaster, some children may develop what is called "Posttraumatic Stress Disorder" (PTSD). Children with PTSD can have repeated episodes when they re-live the traumatic event or respond to other events with excessive fear. Most children will not develop PTSD.
- ☐ Parents who are concerned about their child should seek help

## WHERE TO SEEK HELP:

- ☐ Talk to your child's teacher or guidance counselor
- ☐ Additional assistance is available through the school-based support team
- ☐ Talk to your child's pediatrician/nurse practitioner/family doctor
- ☐ Ask for a referral to a child psychiatrist or psychologist
- ☐ Child and parent support groups will also be available

***Prepared by the Mount Sinai Hospital Divisions of General Pediatrics and Child & Adolescent Psychiatry, September 12, 2001.**

# NYC DOH "Environmental Health Questions"

NYC
Health
THE NEW YORK CITY
DEPARTMENT of HEALTH

## ENVIRONMENTAL HEALTH QUESTIONS FOLLOWING THE WORLD TRADE CENTER DISASTER

The September 11, 2001 World Trade Center (WTC) disaster was unprecedented in the history of the United States. The New York City Department of Health (DOH), as well as other City, State and federal agencies continue to monitor conditions and are committed to working with the community to identify and address health concerns. The purpose of this fact sheet is to answer common questions related to the WTC disaster, particularly as they relate to the fires at the site and the potential impact on public health.

### Why did the fires at the site burn for so long?

Initially, it was anticipated that the fires would cease burning within the first few weeks of the disaster. Unfortunately, they continued to burn at the site, contributing to prolonged, intermittent releases of smoke into the air. In most situations, fires in buildings can be put out quickly. In the case of the WTC, the fires burned below the surface and were fed by large quantities of combustible materials like carpeting, furniture, computers, and other building materials. As steel and rubble are removed and the pile shifts, oxygen is added to the hot embers and the fires can be revived. As a consequence, smoke continued to be released intermittently.

### I live and/or work downtown. Do I need to be concerned about the air I'm breathing?

For healthy people living and working in areas near the WTC site, it is believed that the contaminant levels in the environment do not pose serious long-term health risks. While exposure to smoke can cause eye, nose and throat irritation among healthy individuals, these symptoms are usually short-lived and are unlikely to lead to ongoing health problems. The fires at the site can also contribute to odors in the surrounding area. When odors are present, some people may experience short-term effects such as respiratory irritation, headaches and dizziness. These effects tend to lessen once exposure to the odors is stopped.

**ADVISORY:** If you experience more serious symptoms, such as shortness of breath, or chest pains, or if you have a medical condition you feel is worsening, you should seek medical attention immediately.

### I am experiencing eye, nose, and throat irritation. What from the WTC site may be causing this?

Smoke from the fires still burning at the WTC site is the likely source of compounds such as airborne particles or particulate matter (PM) and sulfur oxides, which can cause temporary airway irritation. Results of analyses of the fine particles in the air have shown that sometimes the composition of the particles is alkaline, which can also result in respiratory irritation.

### If I have asthma or other respiratory conditions, am I at greater risk for adverse health effects?

If you have asthma, chronic bronchitis, emphysema, or other respiratory ailments, you may be more affected by ongoing exposure to the smoke.

**ADVISORY**: If you have asthma or other respiratory conditions, work with your health care provider to make sure that you are on the proper medications to stabilize your condition. It is also important to limit your exposures to dust, smoke and other triggers that in the past have affected your health condition. For example, on days when the outside air causes you discomfort, you should limit outdoor exercise or activities. Air filters can be used indoors to improve indoor air quality.

### I still notice dust in the neighborhood. What is being done to control the dust and clean up the neighborhood?

Initially, the collapse of the WTC towers caused significant quantities of smoke and dust to be released into the surrounding area. The dust contained a range of construction materials including concrete, gypsum, silica, plastics, and fiberglass. Asbestos, which was used in portions of the building as insulation, has also been found in smaller quantities in the dust and debris.

In order to reduce dust in the environment and minimize exposure, the following steps have been taken:

- In the first few weeks after the disaster, the Department of Sanitation (DOS) and Department of Transportation (DOT) mounted an extensive clean up effort to remove debris from surrounding public areas. The DOS continues routine wetting-down of streets in the downtown area in order to minimize dust that may currently be generated from the WTC site.
- All trucks leaving the WTC site are required to be hosed down before leaving the site and trucks carrying debris out of the site are required to be covered.
- Steel beams are wetted down before they are loaded onto the barge located at Pier 25, at the West Side Highway and one block north of Chambers Street.

The NYC Department of Environmental Protection (DEP) has issued guidance on cleaning building exteriors for residential and or commercial buildings. These guidelines can be found at the DEP website at **nyc.gov/dep**.

### Do I need to be worried about asbestos in the air?

Asbestos was found in samples of dust and debris near the WTC site in the first few weeks after the WTC incident. Based on those results, extensive air monitoring for asbestos was conducted in the neighborhood surrounding the WTC site. Workers on-site have been instructed to wear protective equipment such as respirators, as they may be handling asbestos-containing materials as well as other contaminants.

Based on the asbestos air test results so far, the risk for disease from asbestos exposure in the community near the WTC is very low. Asbestos exposure does not cause immediate symptoms and short-term exposure cannot be detected by routine medical tests, such as physical exams, blood work or chest x-rays. It takes at least 15-20 years to see any symptoms or disease related to asbestos exposure, but experts believe that the levels of exposure to asbestos are low enough that the likelihood of developing disease from the limited, short-term exposures associated with the WTC incident is very small.

For the general public, working and/or living in the surrounding area, DEP issued guidance to building management or the building owner on what must be done to deem a building safe for re-occupancy. These DEP guidelines are still in effect. The DOH issued cleaning guidance for residents of buildings that were deemed to be safe for re-occupancy. This information can be found at **nyc.gov/health**.

While the risk for asbestos-related illness is thought to be very low, it is still prudent to take clean-up precautions to further reduce any unnecessary exposures. These simple steps include the following: wet wiping and mopping dusty surfaces, using a HEPA-filtered vacuum if possible, and removing shoes before entering homes to reduce tracking dust indoors. These precautions should be taken until the demolition and clean up at the WTC is completed.

### What is fiberglass, and what are its potential adverse health effects?

Fiberglass is the trade name for a man-made mineral fiber that also may be called fibrous glass or glass wool. Fiberglass can be found in many different consumer products. In the past it was used for home furnace filters and insulation. Today it is used to insulate pipes and appliances, for sound control in aircraft and automobiles, and in curtains, roofing materials and reinforced plastics.

Fiberglass may have been used in the construction of the WTC. Extensive air monitoring to date has indicated that fiber concentration in air— including asbestos and fiberglass — is low.

High levels of occupational exposure to fiberglass fibers may cause skin irritation and itching. It may also cause upper respiratory tract irritation and may aggravate asthma or bronchitis. These are temporary conditions and are unlikely to occur for people in the community given the low concentrations of fibers in the air around the disaster area.

### What is the illness being referred to in newspapers as "WTC Cough?"

The terminology "WTC Cough" has been used to refer to a condition identified in people who may have developed a persistent cough and other respiratory symptoms related to working at or near the WTC site. Physicians in the community have described such a cough among individuals who worked at the site within the first few days after the disaster when smoke and exposure conditions were most intense. Workers on the debris pile have been instructed to wear the appropriate personal protective equipment, including respirators, to prevent injuries or adverse health effects.

While environmental air sampling results outside of the debris pile and outside of the plume continue to show that levels of dust and other substances are within the levels specified by federal standards, City and State health agencies are communicating with physicians in the community to determine health conditions.

## What is fine particulate matter and why is it being monitored?

The explosion at the WTC released very small airborne particles into the air known as "fine particulate matter," or "PM" for short. Particulate matter comes mostly from the process of combustion (burning). Fires are a source of particulate matter, as is the exhaust from cars, trucks, buses, and other operations that involve the burning of fuel.

Particulate matter ranges in size from very small to larger particles. The most commonly measured sizes are $PM_{2.5}$ and $PM_{10}$. $PM_{2.5}$ refers to particles that are 2.5 microns or less in diameter. These particles are extremely small and are therefore more likely to be inhaled deeper into the lungs. $PM_{10}$ refers to particles that include 2.5 microns in size as well particles up to 10 microns in diameter, which, because of their relatively larger size, cannot travel as deep into the lungs. Increased levels of fine particulate matter can cause eye, nose, throat and lung irritation, which can trigger coughing and sneezing. Such exposures may aggravate symptoms for persons with underlying respiratory conditions.

Even prior to September 11, the New York State Department of Environmental Conservation (NYSDEC) has had continuous (real-time) air particulate monitors ($PM_{2.5}$) collecting samples at eleven sites in New York City. These routine monitors are located in each Borough. The data from these monitors are evaluated daily. Additional monitors have been set up to collect particulate data ($PM_{2.5}$ and $PM_{10}$) in the community near the site. Results from the air monitors are compared to the National Ambient Air Quality Standard. For $PM_{10}$ the standard is 150 micrograms of particles per cubic meter of air (ug/m3). For $PM_{2.5}$ the standard is 65 ug/m3 for the general population. The $PM_{2.5}$ standard is 40 ug/m3 for people with respiratory illnesses, individuals with heart problems and the elderly or young, since these individuals may be more susceptible to more severe symptoms.

## What are the results of the PM 2.5 and PM 10 monitoring?

Testing at the monitoring sites set up both before and after September 11th has revealed that, in general, levels of fine and course Particulate Matter have been within the EPA standards.

## Where can I find more information on the WTC-related environmental testing?

Daily WTC-related reports that contain results of sampling for air, water, and dust – including asbestos and Particulate Matter – are posted online at the U.S. Environmental Protection Agency's website, **epa.gov**. DEP results are posted at **nyc.gov/dep**.

*January 2002*

BEST COPY AVAILABLE

# Records from NYC Board of Education on Test Results for Stuyvesant High School

NRDC
THE EARTH'S BEST DEFENSE

NATURAL RESOURCES DEFENSE COUNCIL

December 19, 2001

Chancellor Harold O. Levy
New York City Board of Education
110 Livingston Street
Brooklyn, N.Y. 11201

Dear Chancellor Levy:

We are writing to you regarding air quality concerns at the Stuyvesant High School building in the wake of the World Trade Center attacks. We recognize the enormous challenges the Board of Education is facing in response to this disaster (in addition to your other capital construction projects), and we understand that you have already taken some actions to address the problems at Stuyvesant. However, we believe that the situation is one that requires further steps to protect the health of students and staff.

In short, it appears as if the Stuyvesant High School building may be operating in violation of state education department regulations designed to protect air quality in schools and that immediate action should be taken to bring it into compliance to ensure the health of the more than 3,000 students, teachers and staff at this school. In the remainder of this letter, we briefly discuss the air quality problems in and around the school building, identify the state regulations at issue, and propose short-term steps the Board of Education can take to remedy this situation.

## Background

At the request of the Stuyvesant Parents' Association, the Parents' Association of PS 721M (the special education school located at Stuyvesant) and others, the Natural Resources Defense Council, Inc. ("NRDC") has examined air quality monitoring data recorded at the school over the past several months. We have also spoken to parents at the school regarding air quality and the recent health problems that students and staff have been reporting, including asthma and other respiratory difficulties, rashes, nosebleeds and headaches. NRDC is a national environmental and public health organization that has worked for 30 years on air quality issues in New York City and around the country, including air pollution impacts on the health of children.

As you know, immediately following the September 11th tragedy, students at Stuyvesant High School and PS 721M -- along with students at the six other public schools in the downtown area -- were relocated to other facilities around the City due in significant part to air quality concerns. Although Stuyvesant and PS 721M students were sent back to their school building on October 9th, students, parents and staff continue to have significant health and safety concerns related to the ongoing fires at Ground Zero, the fleet of diesel-fueled trucks operating adjacent to the building, and the massive barge loading operation located directly on the north side of the school.

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New York, NY 10011
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## Current Pollution Problems

These pollution sources appear to be contributing to worrisome air quality problems at the Stuyvesant High School building. Most significantly, data obtained by the Board of Education's own technical consultants indicate that, both inside the building itself and around its perimeter, concentrations of fine particulate matter ($PM_{2.5}$) have frequently been higher than the level -- 40.5 $\mu g/m^3$ -- identified as unhealthy to children and sensitive populations in U.S. Environmental Protection Agency's Air Quality Index, and higher even than the level -- 65 $\mu g/m^3$ -- established to protect the general population in EPA's national air quality standards. According to the most recent $PM_{2.5}$ data, samples taken inside the school on each day from December 3rd to December 14th exceeded the 40.5 $\mu g/m^3$ level, and samples from 7 of those 10 days exceeded the 65 $\mu g/m^3$ level. On December 13th, levels of $PM_{2.5}$ reached as high as 110 $\mu g/m^3$ on the indoor monitors. This particulate matter is a potent air pollutant that can bypass human respiratory defenses and lodge deeply in the lungs – decreasing lung function, exacerbating respiratory illnesses including bronchitis and asthma, and even resulting in premature death.

In addition to fine particulate matter, monitoring at the Stuyvesant High School building on a number of days in November showed elevated levels of airborne asbestos. Most significantly, on November 28th, monitoring revealed concentrations of asbestos nearly double the exposure limits set forth in federal Asbestos Hazard Emergency Response Act regulations, which are explicitly designed to protect school children and staff from asbestos exposure. Asbestos is a known carcinogen and long-term exposure can result in serious health problems including asbestosis, lung cancer and mesothelioma. Scientists agree that there is no known safe level of asbestos exposure. When outdoor levels of asbestos are elevated, the likelihood of airborne asbestos entering the school building must be considered high since the existing ventilation system is not currently equipped to remove these microscopic fibers.

These data suggest that the Stuyvesant High School building does not conform to state education department regulations aimed at ensuring safe and healthy air in schools. Specifically, state rules mandate that "[e]ach teaching space shall....have sufficient air changes to produce healthful conditions and avoid . . . concentrations of toxic substances or dust particles." 8 NYCRR § 155.1(b)(3)(ii). See also 24 RCNY §45.11(m) (New York City Department of Health rules requiring "[p]roper and sufficient ventilation" in school buildings.) As discussed above, since returning to the Stuyvesant High School building, students have been repeatedly exposed to unhealthful air, including elevated levels of $PM_{2.5}$ and probably asbestos. Thus, the ventilation system at Stuyvesant appears to be inadequate to prevent "concentrations of toxic substances or dust" from entering the classrooms, in direct contravention of state regulations.

## Recommended Steps

It is our understanding that there is a solution to these air quality problems -- the upgrading of central and classroom ventilation systems at Stuyvesant to enable the utilization of "High Efficiency Particulate Arresting" or "HEPA" filters. These advanced filters are the most efficient filters available for removing fine particulate matter and are the only air filters that are effective in removing asbestos. In fact, it is our understanding that the Board of Education contracted with an engineering firm to determine whether the building's central filtration system could be retrofitted with HEPA filters. However, the Board of Education has been dragging its feet in disclosing the results of this evaluation and no progress has been made in implementing the HEPA upgrades. In addition, because of lingering health concerns over exposure to fumes that may be emanating from Ground Zero, we also suggest that the Board of Education consider the installation of activated charcoal filters -- in addition to the HEPA filters -- on the school building's ventilation system.

* * * * *

This letter is not intended to document all of the environmental and public health threats in and around the Stuyvesant High School building. Nor is it intended to identify other potential legal violations at the school building, such as a failure to accommodate the needs of students with asthma and other disabilities under federal law. However, we believe that taking the achievable steps outlined above will help address the school building's current failure to meet mandatory state education regulations and possibly resolve any other legal deficiencies.

Due to the urgency of this issue, we would like to schedule a meeting with you and your staff, as well as with parent representatives, to discuss this situation in more detail and to develop an amicable plan to address the remaining concerns at Stuyvesant on an expeditious basis. As you know, NRDC has a long-standing interest in the New York City public schools, having worked with the Board of Education on issues relating to environmental and public health matters, including the conversion of coal-burning furnaces to natural gas. We look forward to working with you on this issue to achieve similarly constructive outcomes. We can be reached at (212) 727-4453 and would greatly appreciate it if your office could call to schedule a meeting at your earliest convenience.

Very truly yours,

Mark A. Izeman
Senior Attorney

Katherine Kennedy
Senior Attorney

cc: Deputy Chancellor David Klasfeld
Bernard Orlan, Office of Environmental Safety and Health, BOE
Stanley Teitel, Principal, Stuyvesant High School
Marilena Christodoulou, Stuyvesant Parents' Association
Miriam Badillo, Parents' Association of PS 721M
Claire L. Barnett, Healthy Schools Network

NRDC
THE EARTH'S BEST DEFENSE

NATURAL RESOURCES DEFENSE COUNCIL

BY CERTIFIED MAIL

January 22, 2002

Mr. Patrick Boyd
Records Access Officer
New York City Board of Education
110 Livingston Street
Brooklyn, N.Y. 11201

Dear Mr. Boyd:

I am writing to request information pertaining to the ventilation and filtration system at Stuyvesant High School in Manhattan. I make this request pursuant to New York State Freedom of Information Law, Public Officers Law §84 et seq.

Specifically, I request copies of all reports, letters, correspondence, memoranda and other papers (including all e-mail correspondence) contained in your files relating to the actual or potential cleaning, maintenance and/or improvement of Stuyvesant's central or unit ventilators and air filtration equipment after September 11, 2001, including, but not limited to, any materials prepared by the firm Burns and Roe on these subjects.

If this request is denied either in whole or in part, please inform me of the reasons for your decision and the Board of Education's appeal procedure. If your office determines some portions of the requested materials are exempt, I request, in accordance with the Law, that we be provided with the remaining non-exempt portions. I, of course, reserve the right to appeal any decision to withhold any such information. If you do not grant my request within five working days, as required by the law, I will deem my request denied.

NRDC is prepared, if necessary, to pay reasonable costs for locating or reproducing any requested documents. However, because we seek this information for the benefit of the public, we request a waiver of our fees. NRDC is a non-profit organization and will not benefit financially from this information.

40 West 20 Street
New York, NY 10011
TEL 212 727-2700 FAX 212 727-1773

WASHINGTON, DC • LOS ANGELES • SAN FRANCISCO

To expedite this matter, please feel free to telephone me at (212) 727-4531 if any questions arise in connection with my request. Thank you for your assistance.

Very truly yours,

Sarah G. Newkirk, Esq.

cc: David Klasfeld, Deputy Chancellor

NRDC
THE EARTH'S BEST DEFENSE

NATURAL RESOURCES DEFENSE COUNCIL

BY CERTIFIED MAIL

May 23, 2002

Mr. Robert Meeker
Assistant Director
Audits & Special Projects
Board of Education of the City of New York
110 Livingston Street
Brooklyn, N.Y. 11201

Re: Freedom of Information Act Request #2774

Dear Mr. Meeker:

Thank you for sending us documents in response to the above-referenced request, which we received on April 29, 2002. I hope that you have received our payment of $43 to cover the cost of their reproduction. We are writing again because we believe that the Board of Education has not provided a complete response to our January 22, 2002 request for the reasons described below.[1]

First, the package of responsive documents sent to us by the Board of Education does not contain any documents dated prior to November 6, 2001. As you know, the students were returned to the Stuyvesant High School on October 9, 2001. At that time, their parents were told that the school – including elements of the air-handling system – had already been cleaned. In addition, it appears that there were significant discussions prior to November 6, 2001 between the Stuyvesant Parents Association, the Board of Education, and other parties regarding the proper scope of the Board's efforts with respect to the ventilation system. No documents memorializing these events, or any other event pre-dating November 6, 2001, are contained in the Board of Education's response to our request.

Second, the package of documents sent to us by the Board of Education does not contain documents reflecting internal Board of Education deliberations, and appears to be limited to correspondence between Board of Education staff and outside parties. It seems highly likely that dialogue among Board of Education staff regarding the Stuyvesant ventilation system did occur, and that such dialogue was recorded in e-mail correspondence, meeting minutes and/or other documents. Such documents, however, are absent from the Board of Education's response to our request.

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[1] FOIA request #2774, dated January 22, 2002, sought: "copies of all reports, letters, correspondence, memoranda and other papers (including e-mail correspondence) contained in your files relating to the actual or potential cleaning, maintenance and/or improvement of Stuyvesant's central or unit ventilators and air filtration equipment after September 11, 2001, including, but not limited to, any materials prepared by the firm Burns and Roe on these subjects."

Third, portions of many of the documents sent to us by the Board of Education have been redacted.

The Board of Education's response to our request did not contain explanations of the absent documents or the redactions described above. As you know, the Board of Education is required to explain why these documents are being withheld. Chancellor's Regulation D-110, implementing the Freedom of Information Law, provides that: "[w]here the Central FOIL Designee believes that a record should not be released, [he] must inform the requester of the grounds upon which access to the records is denied". In responding to FOIL requests, state agencies "must articulate 'particularized and specific justification' for not disclosing requested documents." Sanders v. Bratton, 718 N.Y.S.2d 19, 23 (1st Dept. 2000) (quoting Matter of Gould v. New York City Police Dept., 89 N.Y.2d 267, 274-275 (1996)).

We respectfully request, therefore, that the Board of Education either send us copies of the documents described above or provide us with an explanation of the Board's decision to withhold them. For the same reasons, we also request that the Board of Education explain the basis of its decision to redact portions of the documents it provided.

Finally, two of the documents sent to us by the Board of Education are incomplete. These documents are: (1) an e-mail message, dated January 17, 2002, from Robert Cascone to Nancy Gawlowicz regarding budget concerns; and (2) a Fax from AWL Industries to Burns & Roe, dated January 30, 2002, proposing costs for work at Stuyvesant. Again, we respectfully request complete copies of these documents.

If you have any questions, please feel free to contact me at (212) 727-4531. Thank you again for your efforts to date in connection with our request.

Sincerely,

Sarah G. Newkirk, Esq.

Cc: Patrick Boyd, Central Records Access Officer
Ron LeDonni, Secretary to the Board
Robert J. Freeman, Executive Director, New York Committee on Open Government

# STUYVESANT HIGH SCHOOL

| UNIT | QTY. | ODOR GUARD | QTY. | BAG FILTER | QTY. | 4 PLY | C.F.M. |
|---|---|---|---|---|---|---|---|
| HVAC-1 | 30 | 24 X 24 | 30 | 24 X 24 | | | 55,000 |
| HVAC-2 | 15 | 24 X 24 | | | 4 | 116 X 25 | 28,300 |
| HVAC-2 | 5 | 12 X 24 | | | | | 28,300 |
| HVAC-3 | 8 | 24 X 24 | | | 1 | 112 X 25 | 16,000 |
| HVAC-3 | 2 | 12 X 24 | | | 1 | 112 X 20 | 16,000 |
| HVAC-4 | 8 | 24 X 24 | | | 1 | 112 X 16 | 13,000 |
| HVAC-4 | | | | | 1 | 112 X 20 | 13,000 |
| HVAC-5 | 2 | 20 X 20 | | | 2 | 51 X 16 | 5,000 |
| HVAC-5 | 4 | 20 X 16 | | | | | 5,000 |
| HVAC-6 | 2 | 20 X 20 | | | 2 | 51 X 16 | 5,000 |
| HVAC-6 | 4 | 20 X 16 | | | | | 5,000 |
| HVAC-7 | 12 | 20 X 25 | | | 3 | 84 X 26 | 17,600 |
| HVAC-7 | 4 | 16 X 20 | | | | | 17,600 |
| HVAC-8 | 12 | 20 X 25 | | | 3 | 84 X 26 | 17,600 |
| HVAC-8 | 4 | 20 X 16 | | | | | 17,600 |
| HVAC-9 | 12 | 20 X 25 | | | 3 | 84 X 26 | 14,400 |
| HVAC-9 | 4 | 20 X 16 | | | | | 14,400 |
| HVAC-10 | 11 | 25 X 20 | | | 4 | 114 X 20 | 17,600 |
| HVAC-10 | 6 | 20 X 20 | | | | | 17,600 |

November 6, 2001

Mr. David Klasfeld
Deputy Chancellor
Board of Education of City of N.Y.
110 Livingston Street
Brooklyn, New York 11201

Dear Mr. Klasfeld:

Thank you for attending our Executive Board meeting yesterday evening and for bringing us a written response to our letter of October 11, 2001, which transmitted to you Mr. Bader's October 10th letter to our Parents' Association.

I would like to review several of the items in your response as, unfortunately, there are still several issues that have not been addressed.

Certification:
To-date, we have not received certification by State and Federal air monitoring agencies confirming that the building is safe to resume classes in. In her October 5th letter to parents, Dr. Terry Marx had represented that such certification had been obtained. At our meeting of October 30th, Joe Nappi had told us that he would get back to us on this item.

Request to Modify Air Monitoring and Indoors Sampling:
We understand from Howard Bader that these items have been agreed upon with Mr. Orlan. However, Mr. Bader has only received a draft protocol. Please provide him with the final protocol as soon as possible.

HVAC System Operation and Filtration:
We are aware that pleated filters are being used for the main air-handling units. However, based on the levels of particulate matter inside the school, they are not deemed to be adequate by Mr. Bader.

Regarding the 300 unit ventilators, at our meeting of October 30th, we were informed by Mr. Orlan that the ordering of pleated filters for such units "fell through the cracks" and was never put through. On October 30th, two unit ventilators (one on the South side and one on the North side of the school) were fitted with new 4-ply ring filters recommended by Mr. Bader on a test basis. It was agreed that they would be tested and evaluated for one week.

On November 2nd, at the completion of the test period, Mr. Bader informed us and Mr. Orlan that the 4-ply filters have demonstrated some improvement (approximately 20%) in reducing indoor airborne particulate levels when compared to existing filters used throughout the school. The mechanical performance of the unit ventilators does not appear to be negatively impacted by the new filters. This marginal improvement indicates there may be significant air by-pass around the filters in the unit ventilators. Mr. Bader requested of Mr. Orlan that, as an interim measure, the BOE install 4-ply ring filters in all unit ventilators in the school as soon as possible. Based on Mr. Bader's discussions with the manufacturer, we understand that 300 such filters can be obtained within a week.

As Mr. Bader explained to you last evening, based on the particulate levels we are still getting even with the 4-ply filters, these filters clearly are not a satisfactory permanent solution. We wish to confirm our agreement of last evening that the BOE will immediately bring in an Engineering Consultant to evaluate a modification or upgrade of the HVAC system to enable utilization of HEPA filtration in order to reduce or eliminate the intrusion of outdoor contaminants into the school.

Mr. Bader is available to work with the engineers to try to accomplish this goal, and he has several ideas to explore with them. The Executive Board has asked me to convey to you its request that this HVAC evaluation be completed within one week.

Further, on the HVAC system, as I had brought to your attention in my letter to you of October 19th, the HVAC air distribution duct system was never cleaned or tested after September 11, and prior to reoccupancy. Please provide a testing strategy to address this concern. At a minimum, the testing should include surface contaminant testing currently requested in other areas of the building.

Bridge Cleaning:
We are gratified to hear that the bridge will now be cleaned on a daily basis. Please let us know when this schedule will commence.

CDC Epidemiologist:
As agreed, please provide us as soon as possible with the name and telephone number of the epidemiologist assigned to Stuyvesant so that Dr. Sheldon Stachel can contact him.

Contingency Plan:
As discussed with you at our PA Executive Board meeting, we jointly need to come up with an acceptable contingency plan in case environmental monitoring indicates that the school is uninhabitable for any period of time. Again, this needs to be accomplished on an urgent basis.

Finally, we would like to invite you and Mr. Orlan to attend our next PA General Meeting on November 13th, at 7:00pm, and address the parents. Please let me know. If you will be coming so we can include you in our program.

Thank you for your cooperation.

Sincerely,

Marilena Christodoulou
PA President

cc: Mr. Howard Bader

**Burns and Roe Enterprises, Inc.**
800 Kinderkamack Road, Oradell, New Jersey 07649
NY (212)563-7700

| Post-it® Fax Note 7671 | Date | # of pages ▶ 5 |
|---|---|---|
| To CHARLES COLLINS | From BILL ORBAN | |
| Co./Dept. | Co. | |
| Phone # | Phone # | |
| Fax # 718.391.6909 | Fax # | |

November 19, 2001

ARCHITECTURE & ENGINEERING
2001 NOV 19 AM 11:51

①

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Meeting Dated – July 26, 2001

Mr. Charles Collins, PE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

Attached are the meeting minutes for the November 15, 2001 meeting concerning indoor air quality and air filtration at Styvesant High School. We look forward to working with the Board of Education and Styvesant High School and are confident we can address the concerns. In addition, we are enthusiastic regarding the prospects of providing additional HVAC consulting service to the Board of Education for the seven additional schools evacuated on September 11.

Considering our meeting and based on our understanding of the project requirements we have outlined the following Scope of Work. Emphasis has been placed on upgrading the outdoor air filtering of the facilities air handlers and the use of HEPA filtration has been suggested. As stated in the meeting, the use of HEPA filtration may not be feasible due to the high static pressure it would impose on the fan system and the space requirements for pre-filtering and the use of HEPA filters as an after filter. In any event, a major scope of work item would be to survey the facilities air handlers and provide recommendations for improvements to the filtering efficiency of the existing outdoor air filters.

We anticipate a multi-phase program. Phase 1 of the program would consist of the following Scope of Work items and level of effort.

Item 1 - Air handlers - Outdoor Air Filtration (40 Labor hours)

1. Burns and Roe will review the design HVAC drawings to determine the system capacity, service area, and design cfm for supply/return/outdoor air for each system.
2. The HVAC systems will be field surveyed to determine representative static pressure conditions and existing fan amperage readings.

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3. The HVAC systems will be field surveyed to determine the existing filter type, surface area, efficiency, and frame size.
4. Based on the field survey, filter improvement recommendations will be presented along with a budgetary capital cost estimate for alternative filter selections.

Proposed option include:

- Industrial Panel Filters - 2" thick 80 to 85% efficiency
- Pleated Filters up to 90% efficiency - Up to 4 ply
- BioCel 95% efficiency - Alternative to HEPA filters
- HEPA filters

Item 2 - Classroom Unit Ventilators - Outdoor Air Filtration (40 Labor hours)

1. Burns and Roe will review the design HVAC drawings to determine the system capacity, service area, and design cfm for supply/return/outdoor air for a typical floor.
2. The systems will be field surveyed to determine HVAC system alternatives for air filtration improvements.
3. The systems will be field surveyed to determine the existing filter type, surface area, efficiency, and frame size.
4. Based on the field survey, HVAC improvement and recommendations will be presented along with a budgetary capital cost estimate for alternative system designs.

Proposed option include:

- Modifications of Unit Ventilators to Increase system performance
- Add 4 Ply Pleated Filters up to 90% efficiency
- Add unitary room HEPA filters to provide local filtration
- Investigate HVAC modifications to provide outdoor air from independent rooftop units.

Item 3 – Recommendation And Report (48 Labor hours)

1. Coordination with Environmental Consultant
2. Report and Cost Estimates

Based on the results of the Phase 1, Phase 2 would be developed. Phase 2 would likely consist of the following Scope of Work items. However, the Phase 2 effort may be modified based on the results of the Phase 1 study and/or as directed by the Board of Education.

1. Filter modifications would be proposed for selected air handlers and an air balancing and testing contractor would be retained, as required, to test the HVAC systems ability to accommodate the increased in static pressure and required air flow characteristics.
2. The system air leakage rate will also be a determining factor if higher efficiency type filters are to be effective.
3. The program would modify the Auditorium air handlers and the corridors' air handlers and additional air sampling will be conducted to determine if the filter upgrades are effective.
4. The Classroom Phase 2 program would consist of adding portable room HEPA filtration in selected classrooms along with additional outdoor air filtration to the existing units. Additional air sampling will be conducted to determine if the upgrades are effective compared to classrooms not upgraded with unitary HEPA filtration.

Burns and Roe is proceeding with the work based on our discussion; if this is not your understanding please notify us to suspend the work. Together we can make this effort a success to ensure your program goals are met in both a timely and satisfying fashion and await the opportunity to discuss this assignment and the additional schools. If you have any questions, please do not hesitate to call.

Very truly yours,

Bill Urban, P.E.
Project Manager

Enclosures

CC J. NAPPI
J. LONERGAN
R. RINALDI

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## Styuvesant High School
## Meeting Minutes

**Meeting Date:** Thursday November 15, 2001

**Location:** Stuyvesant High School
345 Chambers Street
New York, NY 10282

**Subject:** Indoor Air Quality Concerns
HVAC Rehabilitation Program

| **Participants:** | **NYC Board of Education** | **Burns and Roe** | **Styvesant HS Parents Association** |
|---|---|---|---|
| | Charlie Collins<br>Bernard P. Orlan | Robert Cascone<br>Bill Urban | Marilna Christodoulou<br>Howard Bader |
| | **Styvesant HS** | **ATC** | **Healthy Schools Network** |
| | Peter Lopa | James Cohn | Claire L. Barnett |

### PURPOSE OF THE MEETING:

Burns and Roe was retained by the NYC Board of Education to review recommendations for HVAC modifications to improve the indoor air quality of Stuyvesant High School. The Styvesant HS Parents Association is concerned about the quality of the indoor and has retained the services of Mr. Howard Bader and has solicited the Healthy Schools Network to assist in upgrading the filtering of the school's outside air.

### DISCUSSION:

- Stuyvesant High School is located in close proximity to the World Trade Center (WTC) site. The school was evacuated during the September 11th terrorist attack and was used in the rescue effort. Concentrations of air contaminants in the Stuyvesant High School general location were due to the destruction of the twin towers and resulting fires. This event resulted in severe levels of particulate matter, gaseous fumes, smoke, and other foreign matter not normally found in the NYC air environment.

- To ensure that the school could be reoccupied by the NYC Board of Education and its student body, ATC was hired to perform extensive indoor air quality surveys and to establish the proper building hygiene program to bring the building into conformance with air quality standards established by EPA, OSHA, and ASHRAE.

- Barge operations supporting the removal of the WTC debris is an additional air pollutant issue. The barge operations, requiring diesel crane operations, were being conducted in close proximity to the North face of the High School. The operations are considered an additional source of outdoor air contaminates.

- The Stuyvesant High School parents association retained the services of an environmental consultant to review the sampling program being conducted by ATC and to provide additional air quality improvements recommendations for consideration by the NYC Board of Education.

- Emphasis has been placed on upgrading the outdoor air filtering of the facilities air handlers and the use of HEPA filtration has been proposed. The use of HEPA filtration may not be feasible due to the high static pressure it would impose on the fan system and the space requirements for pre-filtering and the use of HEPA filters as an after filter.

**Prepared by:** ______________________

For Robert Cascone, P.E.

**Date Prepared:** Monday, November 19, 2001

CC J. NAPPI
J. LONERGAN
R. RINALDI

**Burns and Roe Enterprises, Inc.**
:k Road, Oradell, New Jersey 07649
)0 NY (212)563-7700

| Post-it® Fax Note 7671 | Date | # of pages ▶ 9 |
|---|---|---|
| CHARLES Collins | From Bill URBAN | |
| Co./Dept. | Co. | |
| Phone # | Phone # | |
| Fax # 718.391.6909 | Fax # | |

ARCHITECTURE & ENGINEERING 2001 NOV 21 PM 12:15

November 21, 2001

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
November 20, 2001 school visit

Mr. Charles Collins, PE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

Attached is a copy of our letter report from our visit to Stuyvesant High School yesterday and recommendations for the Phase 1 rehabilitation to provide additional filtration for the schools HVAC systems.

In order to expedite an solution, it is recommended to install new filtering on a trial basis and determine results based on the environmental sampling being performed by ATC. ATC is presently on-site performing environmental sampling under City Contract. Burns and Roe also suggests that the Board of Education consider discussing the proposed plan to the Parent Group and their environmental consultant for consideration and implementation. We anticipated that this work could be accomplished during the winter school recess if approvals are obtained in an expeditious manner.

To expedite installation of the proposed filter modifications, we also suggest that the Board of Education solicit a cost proposal from Air Engineering (Contact: Mr. Lawrence Conley, Jr. at 914-238-5945) as a turnkey project. Presently Air Engineering has an existing contract to provide Stuyvesant High School with filters and could most likely retain a sheet metal contractor to perform the modifications required to accommodate the new filters. This would provide a sole source responsibility for the Phase 1 retrofit since Air Engineering would provide supervision and direction for the project.

Once the HVAC systems are ready to be modified, as suggested in our attached letter report, Burns and Roe will retain the services of an air balance contractor to obtain data (cfm, rpm, fan amperage, and static pressure, etc.) before and after the proposed retrofits. This field data in

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conjunction with the unit fan curves will be used to established the long-term modifications required to maintain the required design cfm to meet the cooling load of the areas served by the air handlers. Preliminary field amperage readings for selected fan systems[1] indicate that the fan systems can accommodate some increase in system static since the measured running amps are below motor nameplate full load rated amps. A full performance report will be provided with the completion of the air balance-testing program.

If you have any questions, please do not hesitate to call.

Very truly yours,

Bill Urban, P.E.
Project Manager

Enclosures

CC. J. NAPPI
J. LONERGAN
R. RINALDI

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[1] HVAC 1 50 HP Full load amps 113, Running Amps 87
HVAC 2 30 HP Full load amps 81, Running amps 67
HVAC 6 5 HP Full load amps 14.8, Running amps 10

# Stuyvesant High School
## Letter Report

**Meeting Date:** Tuesday November 20, 2001

**Location:** Stuyvesant High School
345 Chambers Street
New York, NY 10282

**Subject:** Indoor Air Quality Concerns
HVAC Rehabilitation Program

| | | |
|---|---|---|
| **Participants:** | **Burns and Roe** | **Stuyvesant HS** |
| | Robert Cascone | Peter Lopa |
| | **Air Engineering** | **Stuyvesant HS Parents Association** |
| | Lawrence Conley, Jr. | Howard Bader |

## PURPOSE OF THE MEETING:

Burns and Roe reviewed the filter and HVAC modifications proposed by Howard Bader the Environmental Consultant representing the Parents Group of Stuyvesant High School. Burns and Roe also contacted Air Engineering, the company presently supplying air filtration products to Stuyvesant High School, was also contacted by phone to discuss the filter retrofits proposed by Howard Bader and the Parents Group. It was decided to have a joint field survey to determine feasible filter retrofits that could be accomplished with the existing HVAC systems. This Letter Report provides the results of the field survey and the recommendations proposed on a trial basis to improve filtration and indoor air quality.

## DISCUSSION:

Since time is of the essence, the recommendations proposed in this report are suggested to be done on a trial basis and the performance verified by the existing particle count program and indoor air quality monitoring program already established and in place.

Many of the proposals require additional filtration. The additional filtration will increase the static pressure of the supply fan systems. The end result will be a decrease in supply air cfm (cubic feet per minute), and a loss of the economy cooling cycle for the unit ventilators. The detrimental HVAC effects proposed by these emergency short term effort to increase indoor air quality should be measured by an air balance and testing contractor during the retrofit process to field verify the actual amount of system degradation. Once field measurement data is obtained it will be compared to empirical fan curve data and HVAC calculations to determine HVAC modifications required on a long-term basis.

Additional engineering effort will be required to support the long term solution.

## SHORT TERM RECOMMENDATIONS:

***Unit Ventilators - (Classroom Units)***

A Unit Ventilator was inspected and its damper operation and filter placement determined. Based on field observation, any major equipment modifications is technically unfeasible. The existing fan motor is of fractional HP and cannot be modified due to insufficient room within the Unit Ventilator. An additional problem with the Unit Ventilators results from the mixture of outside air and return air before filtering. Thus pre-filtering of outside air before the existing filter is not feasible.

The recommended program for the +/-300 classroom units, is to increase filtration as proposed by Mr. Bader. Various 2, 3, and 4 ply internal ring Tri-Dek filters have been supplied by Air Engineering and tested. The efficiency of these filters is approximately 78% for 1-micron particles. System pressure drops are increased compared to the existing polyester filters that have an efficiency of 20%.

To increase filtering, it is proposed to add after filtering media on the top of the unit ventilators discharge grille. It is proposed to retrofit 2-4 classrooms with after filters and determine the effect of particle reduction and cfm reduction due to the extra filtering. The following options were developed:

Option 1:

Pre-filter: Use existing polyester filter as pre-filter

Add after filter: 4 ply Tri-Dek (Particulate only) - 78% efficiency

Option 2:

Pre-filter: Use 4 ply Tri-Dek (Particulate only) - 78% efficiency

Add after filter: 4 ply Tri-Dek (Particulate only) - 78% efficiency

Option 3:

Pre-filter: Use 4 ply Tri-Dek (Particulate only) - 78% efficiency

Add after filter: Combination carbon activated and Particulate filtration[1]

Long Term Plan

The use of after filters is not recommended as a long term solution due to excessive static pressure that will result in a loss of supply air cfm. The reduction of supply air cfm will be measured and addressed in a Phase 2 program. Since the units are designed to operate on minimum cfm during the heating season and economy cooling is normally only required above 50-55 degrees outside air temperatures, the reduction of supply cfm is not anticipated to result in major HVAC deficiencies during the heating season. We anticipate by operating the units in high speed, that the winter operation of these systems will result in increase filtering efficiency and tolerable space temperature control.

---

[1] Carbon activation is recommended as an option to reduce odors resulting from barge operations. Air Engineering will submit catalog cuts for filter types to be considered. Static pressure and efficiency data will be evaluated when received from Air Engineering.

The HVAC cfm deficiency will become more prevalent in the spring, when portions of the building require cooling and portions of the building require heating due to solar load requirements and exposures. Since the unit ventilators are not provided with a four-pipe system, the building facility engineers must switch over from heating to cooling on a seasonal basis. The availability of economy cooling provided by the unit ventilators compensate for space loads on a room by room basis, by increasing the amount of outside air for space cooling when outdoor air temperatures are in a range of 50/55 to 65/70 degrees.

Above 70/74 degrees mechanical cooling is required, to either supplement economy cooling, or to provide total cooling with outside air indexed to minimum; to satisfy the minimum ventilation requirements of the building occupants.

Retrofit of the Unit Ventilators, as proposed, will probably require using mechanical refrigeration sooner than normal for the spring of 2002. Control of room temperature will be more complex if outdoor air temperatures swing above and below the break even temperature of the building; say +/-60 degrees, the point where the building goes from a heating to a cooling load.

Once the debris from the World Trade Center is removed and barge/crane operations removed from the school proper, the use of after filters should be discontinued and a decision will be made on the proper filter to be used in the Unit Ventilators on a long-term basis.

***Unit Ventilators - (Ceiling Mounted)***

A Unit Ventilator was inspected and its damper operation and filter placement determined. Based on field observation major equipment modifications are not technically feasible. The existing fan motor is ½ HP and cannot be modified due to insufficient room within the Unit Ventilator.

The recommended short-term program, for the +/-28 ceiling mounted Unit Ventilators (UV), is to increase filtration as by adding an after filter in the supply ductwork. A single UV unit inspected in Room 225 had a supply ductwork of 28" wide x 12" high and custom made filters would be required. This will also require some ductwork modifications to provide a slide-in frame to accept the additional filter. The suggested filter is a 4 ply internal ring Tri-Dek filters that has been proposed for the classroom UV units.

It is proposed to retrofit this unit with after filters and determine the effect of particle reduction and cfm reduction due to the extra filtering. The following options were developed:

Option 1:

Pre-filter: Use existing polyester filter as pre-filter

Add after filter: 4 ply Tri-Dek (Particulate only) - 78% efficiency

Option 2:

Pre-filter: Use 4 ply Tri-Dek (Particulate only) - 78% efficiency

Add after filter: 4 ply Tri-Dek (Particulate only) - 78% efficiency

Option 3:

Pre-filter: Use 4 ply Tri-Dek (Particulate only) - 78% efficiency

Add after filter: Combination carbon activated and Particulate filtration1

Long Term Solutions

The continued use of after filters as a long term solution may be recommended based on field measured pressure drops, and supply air cfm during the air balance testing program. This decision will consider the units ability to meet the summer design-cooling load with the additional filtration and an engineering assessment if additional HVAC performance can be obtained from motor/fan modifications.

### *HVAC-1*

This HVAC unit is a built-up unit with outside/return air filtering rack suitable for modification. With the addition of 3" latching clips the frame can be retrofitted to accommodate an after filter as well as a pre-filter.

It is suggested to modify the unit with the following filtration:

Pre-filter: Use Odor Guard a combination of Carbon Activation and Particulate filter1

Add after filter: Bag Filter 95% @ 1 micron

Higher system filtration is possible with this unit due to existing space that accommodates bag filtration. The unit also has the ability to accommodate a higher operating static impose by the extra filtration by either fan rpm changes or motor change.

Long Term Solutions

The continued use of after filters as a long term solution may be recommended based on field measured pressure drops, and supply air cfm during the air balance testing program. This decision will also consider the units ability to meet the summer design-cooling load of the corridors. Additional HVAC motor/fan modifications may be required.

### *HVAC-2*

This HVAC unit is a built-up unit with outside/return air filtering rack. The unit is suitable for modification. Considering the constricted ductwork, extra filtration could be provided with diagonal filter configuration and construction to increase surface area and limit face velocity.

It is proposed to modify the unit with the following filtration:

Pre-filter: Use Odor Guard a combination of Carbon Activation and Particulate filter1

Add after filter: Mini Pleated 85-95% efficiency

Compared to Unit 1, greater system filtration is more difficult with this unit due to physical dimensional constraints. The unit may not have the ability to accommodate a higher operating static impose by the extra filtration by either fan rpm changes or motor change. As proposed, we anticipate that any loss of supply cfm for the winter operation should be tolerable and a long-term solution must be developed for the 2002-cooling season.

Long Term Solutions

The continued use of after filters as a long term solution may be recommended based on field measured pressure drops, and supply air cfm during the air balance testing program. This decision will also consider the units ability to meet the summer design-cooling load of the corridors. Additional HVAC motor/fan modifications may be required.

***HVAC-6 (One Of Four Units Serving The Auditorium)***

The remaining HVAC units of the building are small package units serving the auditorium, gym, cafeteria, music room and other areas of special use. Additional filtration is recommended by ductwork modification to unit's casement. It is proposed to provide pre-filtering before the existing filter section. It is proposed to modify the HVAC 6 on a trial with the following filtration:

Add Pre-filter: Use Odor Guard a combination of Carbon Activation and Particulate filter1

Filter: 2" Mini Pleated 85-95% efficiency @ 1 micron

Higher system filtration is not readily possible due to physical dimensional and static pressure constraints.

Long Term Solutions

It is proposed to modify one unit on a trial basis and then develop a retrofit procedure for the remaining three units serving the auditorium. Once all four units have been retrofitted the particulate sampling program will be utilized to determine system performance and provide the feedback to proceed with the remaining HVAC units of this size and type.

The continued use of pre filters as a long term solution may be recommended based on field measured pressure drops, and supply air cfm during the air balance testing program. This decision will also consider the units ability to meet the summer design-cooling load of the corridors. Additional HVAC motor/fan modifications may be required.

**Prepared by:** Robert A Cascone

Robert Cascone, P.E., November 21, 2001

CC. J. NAPPI
J. LONERGAN

Memo08

**Bryant Lenora**

---

**From:** RobCascone@aol.com
**Sent:** Friday, December 21, 2001 2:51 PM
**To:** Hemida Mohamed
**Cc:** Collins Charles; Gawlowicz Nancy; Wurban@roe.com; NWalash@aol.com; Rrpawl@aol.com; rpavlovich@awlindustries.com; tfusillo@environcorp.com; Hemida Mohamed; RobCascone@aol.com; rcascone@roe.com
**Subject:** Re: FW: [redacted] heating/ventilation

I could not download the zipped file.

Please resend as a word document

The Bd. of Ed contractor has been requested to provide a conditioning report on the unit ventilators operating condition and controls. We expect a defined program by December 28th, 2001 and I will be on site Dec 26 and the 27th to coordinate this activity with the contractor.

The recommendation to add additional filtration is based on the fact that only a 1" wide filter could be added to the existing units. The units track are being modified from a 3/4" filter to a 1" filter.

The HEPA filters would also be provided with carbon activated filters so that odor control plus filtration will be provided.

The cfm range of the proposed w\units vary from 250 to 1000 cfm and are provided with variable speed motors. The teacher would have the ability to reduce cfm and reduce noise on a classroom by classroom basis.

It is anticipated that by running the units at full cfm during the unoccupied periods that the classroom air would be very clean and reduced air changes during classroom periods could be tolerated and sufficient air quality maintained.

The filter proposed [redacted]s a 4 ply pleated filter which has been successfully used at Stuvy. HS.

Robert Cascone - Burns and Roe

# MINUTES OF MEETING

**Meeting Date:** Monday December 3, 2001

Place: IS89

Subject: Indoor Air Quality Concerns

HVAC Rehabilitation Program

Attendees:

Andrew Martin - AWL Industries

Robert Pavlovich - AWL Industries

Bill Urban - Burns and Roe

Robert Cascone - Burns and Roe

**Meeting Objective**:

Burns and Roe reviewed the building's HVAC system to determine filter modifications that would provide a higher degree of filtration than presently provided by the existing filters.

The meeting included a filed survey, with the Board of Education JOC contractor, to determine feasible filter retrofits and HVAC modifications that could be accomplished with the existing HVAC systems.

The NYC Board of Education and their JOC Contractor, AWL Industries has proceeded to implement and proceed with the modifications developed between Burns and Roe, consultants representing the Board of Education, that has been approved by the consultants of the Parents Association for [redacted] and is consistent with the recommendations for Stuyvesant High School.

The Burns and Roe HVAC upgrade program consist of the following:

- Increase particulate filtration of the building air handlers by installing higher efficiency after filters and providing an additional set of pre-filters for each air-handling unit.
- Upgrade of the Unit Ventilators filtration system by using a carbon impregnated pleated filter as a pre-filter to replace the existing filter and the addition of an after filter before the suction side of the supply fan.[1]

Item 1: Filter Upgrade of HVAC-1 through HVAC-8

Burns and Roe program consist of upgrading the filtration of these units by installing two rows of filters in the existing filter racks of the units. This method of filter upgrade is possible except for units HVAC 6 and HCAC-8. To provide an additional set of pre-filters for these units modifications to the existing outside air plenum is required. This detail has been investigated and AWL is proceeding based upon our site visit.

All existing units use 2" wide filters that are installed in filter racks before the coils for protection. It is proposed that with the installation of 2" wide pre-filters as roughing filters, 30-50% efficiency with activated carbon /charcoal for gas odor filtration, that the existing racks be utilized for after filters.

The installation of after-filters above a Merv 8 filter[2] is not a prudent filter selection for these units due to:

⇒ Limited Static Pressure capability of the present HVAC fan systems

⇒ The filter widths for defiant high capacity filters require filter widths of 6 to 11-1/2" wide and could not be readily utilized in the existing units without extensive modifications.

⇒ Filter Selection is not appropriate for type of space utilization. See Air Filter Application Guide in Appendix 1. Higher MERV filters are appropriate for smoking

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[1] Several consultants working with the Stuyvesant Parents Association have proposed various system modifications. The addition of pleated filters in 2,3, and 4-ply variety have been tested with mixed results, due to the static limitation of the UV supply fans. The addition of filter media after the fan has not proven to be effective and the modification of the UV to accept larger size fans is also not a feasible solution. Burns and Roe is currently working on the UV with an air balance contractor and WRL to develop recommendations that would be effective and technically feasible and readily implemented.

[2] See Appendix 1

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lounges and general surgery use.[3]

For school use and based on the HVAC system limitations, appropriate filtration up to 93-95% efficiency at 1 micron can be achieved with Merv 8 pleated filters.

The recommendation for new filters is as follows:

Pre Filter: 2" Tri-DEM Odor Guard - A combination carbon activated and particulate filter

After Filter: 2" Tri-DEM Mini Pleated or 4 Ply Pleated Filter

The combination filter performance of the units will provide 93-95% removal of atmospheric dust at 1-micron particulate size in accordance with ASHRAE Standard 52-68.

### Unit Ventilators

In addition to the central air handlers each classroom is provided with unit ventilators[4] that introduce outside air for ventilation. Since the students spend the majority of their time in the classroom, upgrade of the filtration of these units is desirable.

In addition to [redacted]. Burns and Roe is developing a filter upgrade for the 300 Unit Ventilators installed at Stuyvesant High School.

The final consensus for the proposed upgrade is under study and will be developed after a review of air balance testing. The conversion to single speed motors of higher HP may be required to provide the static pressure necessary for the required conversion.

### Project Approach

AWL Industries, acting as a JOC contractor, was authorized by the Board of Education to proceed with the construction of new air filters racks and ductwork modifications proposed by Burns and Roe.[5] AWL Industries, Burns and Roe, and Air Engineering are to meet to confirm filter selection and delivery.[6]

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[3] Filter Selection above MERE grade 14 requires laminar flow, no source of infiltration, and are used for specialized applications such as hospitals and surgery units.

[4] The school has approximately 93 unit ventilators rated at 750 and provided with a 1/8 HP motor.

[5] Burns and Roe agreed to provide sizes and construction details to the contractor

[6] The Parents Association will be advised of developments and filter selection.

**Nappi Joseph**

| | |
|---|---|
| **From:** | Klasfeld David |
| **Sent:** | Monday, December 03, 2001 9:28 AM |
| **To:** | Nappi Joseph |
| **Cc:** | Smarr Jamie |
| **Subject:** | FW: Stuyvesant High School |

[redacted]

-----Original Message-----
From: Marilena Christodoulou [mailto:marilenach@yahoo.com]
Sent: Sunday, December 02, 2001 9:43 PM
To: Klasfeld David; David Klasfeld
Subject: Stuyvesant High School

December 3, 2001

Mr. David Klasfeld
Deputy Chancellor
Board of Education of City of N.Y.
110 Livingston Street
Brooklyn, New York 11201
By Fax: (718) 935-3463

Dear David:

As you know, the upgrading of the HVAC system at Stuyvesant to enable the utilization of HEPA and activated charcoal VOC filtration is absolutely critical to the health of the students and staff.

We appreciate your retaining the engineering firm of Burns & Roe to address our school's HVAC filtration problem, and we would like to hear from you as to the status of their work.

I was present, along with Howard Bader and Claire Barnett of Healthy Schools Network, Inc., at the first visit of the representatives of Burns & Roe to Stuyvesant three weeks ago, on November 15. At that meeting, Bernard Orlan gave very clear instructions to Burns & Roe that the objective is to retrofit Stuyvesant's HVAC system in order to install HEPA and charcoal filters.

We understand that on November 26, Robert Cascone of Burns & Roe informed Howard Bader that Burns & Roe had sent a written proposal to the Board of Education with their immediate recommendations on the installation of non-HEPA filters on the 300 unit ventilators as an interim step. Mr. Cascone also told Howard Bader that they expected to have a proposal as to the permanent solution of retrofitting the HVAC systems (for HEPA and charcoal filters) on or about December 3.

We also understand that the 4-ply ring filters for the 300-unit ventilators (for the interim solution) were received by the school's custodian on November 26, but that they still have not been installed pending implementation of Burns & Roe's interim recommendations. David, our children returned to Stuyvesant two months ago and still higher-efficiency filters have not been installed in the unit ventilators.

In light of the communication from Mr. Cascone, we would like to arrange for a meeting between representatives of the Board of Education, Burns & Roe, Howard Bader, and the PA Health & Safety Committee as soon as possible this week. We would also appreciate receiving Burns & Roe's written recommendations in advance of the meeting.

Also, please let us know who is replacing Bernard Orlan during his sick leave. Thank you for your cooperation.

Sincerely,
Marilena Christodoulou
PA President

cc: Howard Bader

---

Do You Yahoo!?
Buy the perfect holiday gifts at Yahoo! Shopping.
http://shopping.yahoo.com

-----Original Message-----
From: Marilena Christodoulou <marilenach@yahoo.com>
To: Klasfeld David <DKlasfe@nycboe.net>; David Klasfeld <dbkbubba@aol.com>
Sent: Tue Dec 04 14:17:14 2001
Subject: Response to Your E-Mail Today

In response to your e-mail this morning, as of 12:00 noon today, Mr. Bader has not been advised of Burns & Roe's proposal or schedule.
Notwithstanding, this is our third request for a meeting between BOE and Burns&Roe, and the PA Health and Safety Committee and Bader. We need to know what specific action plan Burns&Roe proposed that will enable HEPA and charcoal filters installation, and the completion dates. I also left a message with your secretary today about this.
As for the barge, the Chancellor and the BOE are responsible 'in loco parentis' for the well-beimg of our children while they are in school. We understand that the Chancellor has spoken to the Mayor.
I will await your call re a meeting. Wednesday and Thursday of this week are fine with us.

**Bryant Lenora**

**From:** RobCascone@aol.com
**Sent:** Friday, December 07, 2001 7:33 PM
**To:** rpavlovich@awlindustries.com
**Cc:** Rrpawl@aol.com; Collins Charles; Wurban@roe.com; Rcascone@roe.com
**Subject:** Re[redacted] / Stuy HS

Robert,

Per our filed visit you are authorized to order filters for SHS as discussed.
We will maximum the pre-filter size in the smaller HVAC units by mounting at a diagonal per our discussion.

HVAC-1 filter bank will be modified for bag after filters using the existing frame as discussed.

HVAC-2 requires the construction of a new pre-filter frame with panels at 45 degrees to maximize filter area as discussed.

Let's meet on Tuesday to select a ceiling unit for after filter modification and we intend to try one of those fan booster unit for Peter's music room. I will review the required cfm on Monday and we can order one unit from Howard as a test.

The unit ventilators work will proceed as follows per Mr. Collins direction today.

Peter will select 3 classrooms for testing of filters. You are requested to retrofit one classroom with racks for after filters per our prior conversations. Pre-filter will be 4 ply and after filter will be 4 ply.

A second classroom will be tested with only a 4 ply pre-filter and

A third classroom will be tested wilt the old roughing filters.

The 3 classroom will be tested for a one week period to determine which filter arrangement is more effective.

Based on particulate testing today we are not confident that the after filter provides any additional filtration benefit.

Retrofit of the UV may be delayed until we have all of the central systems completed.

We will like to see [redacted] completed and the SHS conversion well under way before work is started in [redacted] but I will review the [redacted] with you on Tuesday in case you want to order long lead time materials.

RSC

**Gawlowicz Nancy**

**From:** RobCascone@aol.com
**Sent:** Tuesday, December 11, 2001 9:02 PM
**To:** Collins Charles
**Cc:** Wurban@roe.com; Rrpawl@aol.com; rpavlovich@awlindustries.com
**Subject:** [redacted]

Meeting of 12-11-01

Awl industries was [redacted] to purchase two Rupp ENV-12 units to provide booster fan capacity and filtering to the Kindergarten rooms [redacted] and the Choral room at SHS.

Units are rated at 2HP and 2550 cfm Filtering consists of 1 4" pleat 30%, 1 95% bag filter, 1 carbon 25 lb, and an additional 1 2" pleat 30%

Burns and Roe conf[redacted]draous ad Michael Parpounas of ATC about the merits of adding portable air cleaners for the vestibules of [redacted] and SHS.
ATC will review the data submitted and will confer with Bernard Orlan of the NYC Bd, of ED.

It was proposed to consider these air cleaners for [redacted] but ambient noise may be a problem.

[redacted]

ATC and Burns and Roe reviewed the testing of the Unit Ventilators outside air filtration system. It was agreed to select 4 classrooms on the 5th floor of SHS on both the North and South side of the building.
Classrooms are proposed to be tested with the original filter, one 4 ply pleated, two 4 ply pleated, and the electrostatic filter proposed by McQuay.

Burns and Roe obtained the serial numbers of the unit ventilators in [redacted] and will e-mail to McQuay. McQuay will be requested to provide a mock up test filter unit for testing over the Christmas holiday.

Burns and Roe requested WRL to provide a schedule for SHS and [redacted]. Air balance testing is completed at SHS for the interior units. To expedite testing of the 6 rooftop units face velocity readings of the units coil will be accepted. It is not possible to provide traverse readings at the roof level and lifts would be required to traverse the ducts at the ceilings of the gym, auditorium, etc.

[redacted]

Burns and Roe and WRL will review the ceiling mounted UV units and the modifications of the rooftop units for extra filtration on Thursday after the PS89 meeting.

Robert S. Cascone, P.E.

**Burns and Roe Enterprises, Inc.**
*800 Kinderkamack Road, Oradell, New Jersey 07649*
*NJ (201) 265-2000   NY (212)563-7700*

2001 DEC 12 PM 3:08

December 11, 2001

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 - HVAC filtration

Mr. Charles Collins, PE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

Attached is payment requisition #2 for $15,975.23 ($15,930.03 Labor and $45.20 reimbursable). This requisition includes charges associated with the additional HVAC filtration for Stuyvesant HS, [redacted] Labor charges through December 07, 2001 and expenses through November 30, 2001 have been included.

Should you have any questions or require additional information, please call.

Very truly yours,

Bill Urban, P.E.

cc Narang

BURNS AND ROE ENTERPRISES, INC.
800 KINDERKAMACK ROAD
ORADELL, NEW JERSEY 07649

NYC - BOARD OF EDUCATION
28-11 QUEENS PLAZA NORTH
LIC, NY 11101

CUSTOMER NO. : 111500

INVOICE NO. : 116539

INVOICE DATE : DECEMBER 11, 2001

PROJECT NO. : 02469002

REF. NO.:

PROJECT MGR. : URBAN, WILLIAM J.

| DESCRIPTION | TOTAL AMOUNT |
|---|---|
| PROJECT: 02469002 STYVESANT HS AIR QUALITY & FILTRATION | |
| TO INVOICE REQUISITION # 2 | $15,975.23 |
| SUBTOTAL - COST | $15,975.23 |
| **TOTAL THIS INVOICE** | $15,975.23 |

| | |
|---|---|
| *** TOTAL GROSS COST: | |
| CURRENT COST: | $15,975.23 |
| PREVIOUSLY INVOICED: | .00 |
| CUMULATIVE COST: | $15,975.23 |
| *** TOTAL RETENTION: | |
| CUMULATIVE COST: | $.00 |
| *** TOTAL NET COST: | |
| CURRENT COST: | $15,975.23 |
| PREVIOUSLY INVOICED: | .00 |
| CUMULATIVE COST: | $15,975.23 |

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PLEASE REMIT TO: BURNS AND ROE ENTERPRISES, INC.
P.O. BOX 198842, ATLANTA, GA 30384-8842

INVOICE PREPARED BY MECKY MARTINO 201-986-4661 C1

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ORDER NUMBER

3. SEND INVOICE TO BOARD OF EDUCATION.

ATTENTION Various Schools
ROOM NO.
STREET AND NO. Bronx
CITY STATE ZIP

ATTENTION: Inspection Unit
William Lazzano (718) 391-8333
STREET AND NO.
CITY STATE ZIP

4. VENDOR
Burns and Roe Enterprises, Inc.
800 Kinderkamack Road,
Oradell, New Jersey 07649
STREET
CITY STATE ZIP

5. CERTIFICATION OF DISTRICT OFFICE OR RESPONSIBILITY CENTER
I certify that sufficient funds have been reserved in the budget account codes listed below and that the purchase is in accordance with Board of Education bidding, contract and purchasing regulations.

Harry

6. VENDOR NO. 1 3 4 9 7 8 2 3 0
7. CONTRACT/BID NO. RFP-10-01/ 20029200281
8. APPROVAL DATE MM 04 DD 17 YY 01
9. ELECTRICAL INSP. NO.
10. REQUISITION NUMBER (BOS USE ONLY)

3480219
ORDER NUMBER

| 11. ITEM NO. | 12. DESCRIPTION<br>Items from one vendor only to appear on order | 13. UNITS OF MEASURE | 14. UNITS ORDERED | 15. NET PRICE PER UNIT | 16. AMOUNT |
|---|---|---|---|---|---|
| | SEE CONTRACT<br>Spec. Title: Professional Consultant Engineering Services For H.V.A.C. Equipment.<br>Term: 05/01/01-4/30/02<br>BEST COPY AVAILABLE | | | | NTE $99,0080. |

STARS ACCOUNTING SYSTEM

17. TOTAL ORDERED $: NTE $99,000.00

FINANCIAL ACCOUNTING DATA
ENCUMBRANCE DOCUMENT NUMBER 3480219
18. FISCAL YEAR 2002
19. DOCUMENT REFERENCE NO.
20. REPORTING CATEGORY
21. NO. OF LINES

| 22. SFX | 23. TRANS CODE | 24. DIST. | 25. QUICK CODE | 26. OBJECT | 27. BUDGET | 28. GRANT | 29. LOCATION | 30. AMOUNT |
|---|---|---|---|---|---|---|---|---|
| 1 | 3 0 0 | 5 2 | 0 0 0 6 3 1 | 6 7 6 | | | | NTE $99,000.00 |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

11. FCB APPROVAL

See instruction No. 5 on the reverse side of this order for non-delivery, rejection or delay.

STARS

12. DELIVERY MUST BE COMPLETED WITHIN 60 DAYS OF ORDER DATE OR DELIVERED BY

13. SPECIAL DELIVERY INSTRUCTIONS IF ANY

SEE CONTRACT

14. I HEREBY CERTIFY THAT THE ITEMS ORDERED ABOVE ARE NEEDED TO CONDUCT THE EDUCATIONAL OR ADMINISTRATIVE PROGRAM AND ARE ON EITHER AN APPROVED LIST OR HAVE BEEN INVESTIGATED AND FOUND TO BE SUITABLE FOR THIS PURPOSE.

7/17/01

Signature of Principal or Authorized Official
Date

THIS ORDER IS SUBJECT TO THE INSTRUCTIONS, TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE HEREOF.

Documenting Telephone Conversation:

Date: 12-20-01

Confirming Unit Ventilator Testing at [redacted] and Stuyvesant High School

Date: December 26, 2001 at PS89 10 am

## Scope of Work for Unit Ventilator Testing

Burns and Roe has proposed a program for testing the efficacy of various types of filters to be used in the unit ventilators for [redacted] and Stuyvesant High School. [redacted] and Stuyvesant High School has over 300 unit ventilators.

A meeting has been scheduled for 10 am on Wednesday 12-26-01 and the following individuals have been notified.

Andreas Andreou of ATC

Mohamed Hemida – Bd. of Ed.

Charles Collins – Bd. of Ed.

Thomas Fusillo – Environ

Donald Heimstaedt – McQuay New York

Robert Paulovich – AWL Industries

Neil Walash - AWL Industries

### Methodology

The filter racks at [redacted] are in the process of being converted from 1" wide tracks to 2" tracks. The filter media is 9" wide x 36" long. The program consists of testing four different types of Unit ventilator filters in four classrooms a[redacted] and six classrooms at Stuyvesant High School.

The 2" filter racks enables the Bd. of Ed. to consider various types of filters and to use a combination of carbon activation for odor control and media filter for particulate filtering.

The consultant's and parents of each schools parent's association all have different opinion's on the type of filter material to be used and the best method of unit modification to enhance the filtration of the outdoor air for classroom ventilation.

Burns and Roe has evaluated and cfm tested several types of filter media and has recommended the 2" Odor Guard as the preferred filter, base on its particulate efficiency rated at 85-90% at 1 micron and its carbon activated filter to eliminate odors. This filter will be installed in [redacted]9 and has been shipped.

Due to concerns that this may not be the best filter, the Board of Education has authorized ATC associates, environmental consultants to the Bd, of Ed, to perform environmental testing to assist Burns and Roe in the filter evaluation program.

Discussion with Andreas Andreou of ATC has resulted in the following proposed program:

ATC will monitor 4 classrooms in [redacted] and Six classrooms in Stuyvesant High School for particulate on a continuous basis for a 2-4 week period. Values will be taken on a 15-minute interval, data logged and plotted for comparison.

[redacted]

Stuyvesant High School - Sampling Program - Particulate

Six classrooms on the 5th$^{st}$ floor, three on the South Side and three on the North side, will be sampled. Filters to be installed consist of the following:

Classroom1: 4 ply pleated filter media to serve as baseline.

Classroom 2: 2" Odor Guard III as provided by Air Engineering: 2"- 9" x 36".[1]

---

[1] AWL is requested to retrofit UV's in this classroom with a 2" filter racks

Classroom3: One Classroom with McQuay provided Electrostatic Filter.[2]

Odor Sampling Program

Discussions with ATC, Environ[3], and Howard Bader[4], indicates that there is not a proven method of testing carbon activated filters for odor control and efficiency. Filter data indicates that filers are to be replaced on its ability to remove objectionable odors, thus the human nose is the only proven test to evaluate the performance of these types of filters.

It is also acknowledge that the smell characteristics and ability of the human nose to detect objectionable odors cannot be duplicated by any testing procedures. The introduction of any tracer gas or carbon pollutant and measuring in-situ concentration levels is not an acceptable testing procedure. It is also acknowledge that there is also smell differences between the male and female sensitivity to objectionable odors. Thus it is the consensus that the testing program is a valuable tool in determining the ability of the various filters to control odor.

Program Schedule -[redacted] and Stuyvesant High School

Wed: All Participants to meet at [redacted]

Action: AWL and Burns and Roe to select rooms and identify filter locations. AWL to install filters.

ATC and Environ to review protocol and ATC to install sampling equipment as directed by the Board of Education. Sampling equipment to be set-up by Saturday 12-29-01.

McQay Filters to be operational by Friday 12-28-01.

Sampling to be conducted beginning 12-29-01 and to continue 2 to 4 weeks as authorized by the Bd. of Ed.

ATC to sample classroom particulate concentrations at 15 minute intervals, data log readings, and provide graphs on a weekly basis to all participants.

Robert Cascone

Please leave a voice mail message at 201-986-4112. I will be on vacation until 12-26-01 but will

---

[2] AWL to provide 24 volts wiring as directed by McQuay. McQuay to provide wiring diagram. It is presently understood that 24 volts is available and a step down transformer is not required. If this is not the case we will work out an installation plan with McQuay.

[3] Environmental Consultant [redacted]

[4] Environmental Consultant - Stuvv, H.S. Parents Association

AFTL

# AIR FILTER TESTING LABORATORIES, INC.

4632 Old LaGrange Road • Crestwood, Kentucky 40014

## AIR FILTER PERFORMANCE REPORT ASHRAE STANDARD 52.1-1992
## NON-SUPPORTED EXTENDED SURFACE TYPE AIR FILTERS

REPORT NO. 7365
TEST NO. 1
SHEET NO. 1

**DEVICE TESTED**

TEST REQUESTED BY TRI-DIM FILTER CORPORATION
MANUFACTURER TRI-DIM FILTER CORPORATION
PRODUCT NAME SYN-PRO POCKET FILTER
HOW LABORATORY PROCURED TEST SAMPLE PURCHASED FROM OPEN MARKET
MODEL NO. SP-95T44-[illegible] DIMENSIONS 25 IN. H 24 IN W 30 IN. D

| RATED PERFORMANCE DATA FROM MANUFACTURERS | CATALOG NO. | | DATED | |
|---|---|---|---|---|
| AIR FLOW CAPACITY | | | → | |
| INITIAL RESISTANCE | | | → | |
| FINAL RESISTANCE | | | | |
| INITIAL ATMOSPHERIC DUST SPOT EFFICIENCY | | | | |
| AVERAGE ATMOSPHERIC DUST SPOT EFFICIENCY | | | | |
| AVERAGE SYNTHETIC DUST WEIGHT ARRESTANCE | | | | |
| ASHRAE DUST HOLDING CAPACITY | | | | |

**TEST RESULTS**

| | | | | |
|---|---|---|---|---|
| TEST AIR FLOW RATE | 2000 | | → | CFM |
| INITIAL RESISTANCE | 0.46 | | → | IN.W.G. |
| FINAL RESISTANCE | | | 1.50 | IN.W.G. |
| INITIAL ATMOSPHERIC DUST SPOT EFFICIENCY | | | 90.6 | % |
| AVERAGE ATMOSPHERIC DUST SPOT EFFICIENCY | | | 97 | % |
| AVERAGE SYNTHETIC DUST WEIGHT ARRESTANCE | | | 100 | % |
| ASHRAE DUST HOLDING CAPACITY | | | 515 | Gm |

TEST SECTION DUCT SIZE 24.5 IN. x 24.5 IN. DUST FEEDING RATE 2.0 Gm/1000 CF

SEE BACK SIDE (PAGE 1A) FOR PERFORMANCE CURVES

**PHYSICAL DESCRIPTION**

NUMBER OF PLEATS 8 PLEAT DIMENSIONS 29.50 IN. L x 25.50 IN W
MEDIA AREA – GROSS 84 FT² NET EFFECTIVE 81 FT²
TYPE OF MEDIA NONWOVEN SYNTHETIC THICKNESS 0.25 IN. FIBER DIAMETER –
TYPE OF ADHESIVE ON MEDIA NONE AMOUNT NONE
FACE PLATE CONSTRUCTION FORMED GALV. STL. CHANNEL FRAME
CONTAINS 8 [illegible] ASSEMBLIES
INLET OPEN AREA 3.13 FT² AS A % OF 4.0 FT² = 78 %
BACKER MATERIAL THICKNESS THIN NONWOVEN WEB
METHOD OF SECURING PLEATS - SIDES SEWN/SEALED
AIR ENTERING SIDE CRIMPED ASSEMBLY
TYPE OF FASTENER USED [illegible] STITCH
NO. OF ROWS 2 NO. PER ROW 19
SEALING METHOD USED [illegible]

| DATE | TEST SUPERVISOR | ENGINEERING APPROVAL |
|---|---|---|
| 5-12-[illegible] | J.P.S. | David J. Murphy Jr. |

DAVID J. MURPHY JR. 6035

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# AIR FILTER TESTING LABORATORIES, INC.

AFTL

4632 Old LaGrange Road Crestwood, Kentucky 40014

ASHRAE AIR FILTER TEST STANDARD 52-76
STATICALLY TESTED DEVICES

REPORT NO. 6643
TEST NO. 1
SHEET NO. 1

DEVICE TESTED

TEST REQUESTED BY TRI-DIM FILTER CORPORATION
MANUFACTURER TRI-DIM FILTER CORPORATION
PRODUCT NAME TRI-DEK XL RING PANEL FILTER
HOW LABORATORY PROCURED TEST SAMPLE PURCHASED FROM OPEN MARKET
MODEL NO. ______ DIMENSIONS 24 IN. H 24 IN. W 1.5 IN. D

| RATED PERFORMANCE DATA FROM MANUFACTURERS CATALOG NO. | | | DATED | |
|---|---|---|---|---|
| AIR FLOW CAPACITY | | → | → | |
| INITIAL RESISTANCE | | → | → | |
| FINAL RESISTANCE | | | | |
| INITIAL ATMOSPHERIC DUST SPOT EFFICIENCY | | | | |
| AVERAGE ATMOSPHERIC DUST SPOT EFFICIENCY | | | | |
| AVERAGE SYNTHETIC DUST WEIGHT ARRESTANCE | | | | |
| ASHRAE DUST HOLDING CAPACITY | | | | |

TEST RESULTS

| | | | | |
|---|---|---|---|---|
| TEST AIR FLOW RATE | 1200 | → | → | CFM |
| INITIAL RESISTANCE | 0.26 | → | → | IN.W.G. |
| FINAL RESISTANCE | | | 1.00 | IN.W.G. |
| INITIAL ATMOSPHERIC DUST SPOT EFFICIENCY | | | 28.8 | % |
| AVERAGE ATMOSPHERIC DUST SPOT EFFICIENCY | | | 39 | % |
| AVERAGE SYNTHETIC DUST WEIGHT ARRESTANCE | | | 94 | % |
| ASHRAE DUST HOLDING CAPACITY | | | 403 | Gm. |

TEST SECTION DUCT SIZE 24 IN. X 24 IN. DUST FEEDING RATE 2.0 Gm/1000 CF

SEE BACK SIDE (PAGE 1A) FOR PERFORMANCE CURVES

PHYSICAL DESCRIPTION

FACE DIMENSIONS 24 IN. X 24 IN. Nom.
DEPTH 1.5 IN. Nom.
MEDIA AREA 4 FT²
TYPE MEDIA MULTI-GRADUATED VARIABLE DENIER SYNTHETIC FIBERS
TYPE & AMOUNT ADHESIVE ______

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DAVID J. MURPHY JR.
6035

| DATE | TEST SUPERVISOR | ENGINEERING APPROVAL |
|---|---|---|
| 5-20-1992 | J. F.S. | David J. Murphy |

TEMPAIR

## Air Cleaning Systems

Heating

Cooling

Dehumidifying

Ventilating

Video Site Surveillance

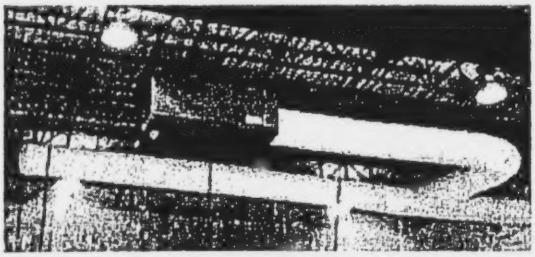
Ground Defrosting

Air Cleaning

Pest Eradication

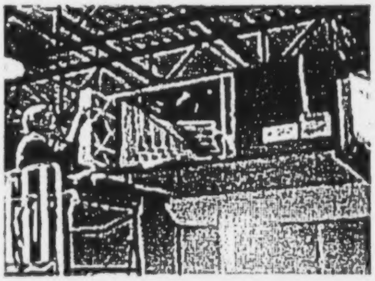
RUPP ENVIRONMENTAL AIR SYSTEMS®

**RUPP Environmental Air Systems** is an air cleaning system designed specifically for the work environment. It works by cleaning contaminated air and then dispersing the cleaned air to where it is needed.



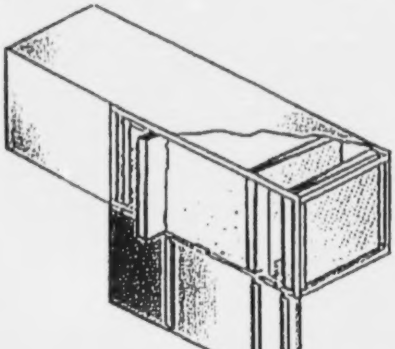
### When you need to solve indoor air quality issues in the work place:

- ✓ Protect worker health by removing air contaminants
- ✓ Protect existing HVAC system and duct work
- ✓ Confine construction dust and odors to site
- ✓ Decrease clean-up and curing time
- ✓ Control migration of contaminants into connected existing facilities



### RUPP Environmental Air Systems feature:

- ✓ Simple design which allows for versatile application and installation
- ✓ 16 gauge steel construction cabinet with reinforced frame
- ✓ Foam gaskets in channels to prevent contaminated air from bypassing filters and leaking into cleaned air stream
- ✓ Rupp EasyAccess Service Door provides convenient access for service
- ✓ Six basic filter packages available for cleaning most environments
- ✓ Optional electrical accessory package for added convenience
- ✓ Rent, lease or sale options



**Choose from a variety of filter combinations that guarantee an effective air-stream cleaning:**

### General Filter Packages

**Extended Surface Filters:** Capture particulate by impaction. Media area of filter is greater than filter face. Most common are bag, cartridge and pleated panel.

**Carbon Absorption:** Is a process in which gas or vapor adheres to the surface of a porous solid material. The higher the molecular weight, the better the adsorption process. 60% activity Coconut Shell Carbon.

**HEPA Filters:** Extended media, dry filter with minimum particle-collection efficiency of 99.97% 0.3 micron particles as demonstrated by the DOP* test method. *Diactyl Phthalate

### RUPP Environmental Air Systems Specification Chart

| Model no. | ENV-10 | EVN-12 | ENV-15 | ENV-212 |
|---|---|---|---|---|
| Motor | 3/4 HP | 2 HP | 3 HP | 7.5 HP |
| Voltage | 115/230 | 230/460 | 230/460 | 230/460 |
| Amps | 13.8/6.9 | 6.8/3.4 | 9.6/4.8 | 22/11 |
| Dimensions* | 78 x 22 x 27 | 78 x 24 x 27 | 78 x 24 x 27 | 78 x 70 x 27 |
| Noise at 10 ft (db) w/ RUPP fabric Duct | 51 | 54 | 58 | 65 |
| Standard Filter Package | 1-4" pleat 30%<br>1-65% bag | 1-4" pleat 30%<br>1-65% bag | 2-4" pleat 30%<br>2-65% bag | 3-4" pleat 30%<br>2-65% bag |
| CFM | 2200 | 3700 | 6100 | 8500 |
| 95% Filter Package | 1-4" pleat 30%<br>1-95% bag | 1-4" pleat 30%<br>1-95% bag | 2-4" pleat 30%<br>2-95% bag | 1-4" pleat 30%<br>1-95% bag |
| CFM | 1900 | 3000 | 5900 | 8000 |
| Carbon Filter Package | one 4" pleat 30%<br>1-95% bag<br>1-carbon 20 lb<br>1-2" pleat 30% | one 4" pleat 30%<br>1-95% bag<br>1-carbon 26 lb<br>1-2" pleat 30% | 2-4" pleat 30%<br>2-95% bag<br>2-carbon 52 lb<br>2-2" pleat 30% | 3-4" pleat 30%<br>3-95% bag<br>3-carbon 78 lb<br>3-2" pleat 30% |
| CFM | 1650 | 2550 | 3550 | 5600 |
| Carbon Filter Package | 1-4" pleat 30%<br>1-95% bag<br>1-DOP | 1-4" pleat 30%<br>1-95% bag<br>1-DOP | 2-4" pleat 30%<br>2-95% bag<br>2-DOP | 3-4" pleat 30%<br>2-95% bag<br>3-DOP |
| CFM | 1500 | 2100 | 3250 | 5700 |
| HEPA Filter Package | special order only | 1- 4" pleat 30%<br>1-95% bag<br>1-HEPA | 2-4" pleat 30%<br>2-95% bag<br>2-HEPA | 3- 4" pleat 30%<br>3-95% bag<br>3-HEPA |
| CFM | | 1800 | 2900 | 5200 |
| Oil and Mist Filter Package | N/A | 1-2" EZ-Clean<br>1-4" grease/mist<br>1-95% bag | 2-2" EZ-Clean<br>2-4" grease/mist<br>2-95% bag | 3-2" EZ-Clean<br>3-4" grease/mist<br>3-95% bag |
| CFM | | 3500 | 6100 | 7100 |

**Note:** Cartridge filters can be substituted for bag filters. Specifications are subject to changes without prior notice.
CFM listed base on 0" ESP.
**Rounded to the nearest inch.

**Want more information? Call us at 1-800-836-7432**

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## Gawlowicz Nancy

From: RobCascone@aol.com
Sent: Thursday, January 17, 2002 10:44 PM
To: Gawlowicz Nancy; NWalash@aol.com
Cc: Rrpawl@aol.com; Lew King; Collins Charles; Wurban@roe.com; Varkey George
Subject: Re: Stuy UV's

Nancy,

Thanks for your e-mail concerning the documentation of the Scope of Work for the WTC schools.

My last conversations with Robert of AWL indicated that billing to date was around $570,000. I had, at that time, indicated to Mr. Collins that based on work required to be completed to date that I would have expected a cost of around $750,000.

You may recall that we both had a conversation with Robert that the $1,000,000 budget was a high upset number at that time and AWL did not expect to reach that $ amount.

We have, at your request, provided a complete Scope of Work for [redacted] and [redacted]; however, the Scope of Work changes on a daily basis due results of air balance testing and rehabilitation work required to bring the schools to code compliance conditions.

I have not been able to reach Oscar of your office and I suggest that possibly your office conduct daily visits to the site to confirm work in place and to establish a more intimate understanding of the tasks we face on a daily basis.

This would provide your office with a better understanding of the e-mails that are being sent between all parties concerned in this critical effort.

As consultant to the BOE and a Professional Engineer I must recommend necessary HVAC modifications to bring the schools to a reoccupied condition. This is the directive that I have been given by the BOE and the Chancellor's office and I have been attempting to do this to the best of my ability. The final cost to accomplish these goals have not been in question until your e-mail of today.

I have, at your request, ask AWL for specific cost proposals for each task identified on a day to day basis. To date I have not received any detailed proposals from AWL.
I would recommend that we have a field meeting tomorrow at the job site with AWl to resolve the issues you have raised. No one associated with this project wants to be associated with conducting any work in manner other than of the highest ethics and professionalism.

I also recommend that your office conduct visits to confirm the tasks of work we have been requesting and receiving confirmation to proceed from the BOE. We have not authorized any work without BOE approval. Each item is documented by me personally every night and transmitted to all parties concerned.

Burns and Roe, at your request, will provide you with the documentation you require but we also must have the cooperation of AWL. Mr. Urban of my office will comprise all of the e-mails to provide a documentation trail for each school.

I will spend the weekend comprising a Scope Document for each school. Mr. Urban will modify this document per a sample document that I understand will be provided by your office.

I have requested AWL to provide detailed quantities for filter racks and all filters provided for this project, as well as for all other tasks required.

The following are Scope of Work items that have been documented and

# INDOOR AIR QUALITY IMPROVEMENT

# AT

# STUYVESANT HIGH SCHOOL, NEW YORK, N.Y.

PREPARED FOR THE

## PARENTS ASSOCIATION

OF

## STUYVESANT HIGH SCHOOL

BY

COSENTINI ASSOCIATES CONSULTING ENGINEERS
2 PENN PLAZA
NEW YORK, NY 10121

JANUARY 24, 2002

## EXECUTIVE SUMMARY

Stuyvesant High School is located in close proximity to Ground Zero of the events of 9-11-2001. It is also adjacent to the routes taken by the vehicles transporting the debris from the site.

The Parents Association is concerned that dust and contaminants created by the collapse of the towers are entering the school and could be a health hazard to the occupants, student and teachers, in the building.

The Parents Association has requested Cosentini Associates, Consulting Engineers to investigate alternative means of controlling the intake of contaminants to the building resulting in improving the indoor air quality. Of particular concern is conditions in the classrooms, where students spend the majority of their time when in the school building.

Currently ventilation of the classrooms is provided by a series of "Unit Ventilators". These unit ventilators take air from outside the building and introduce it directly into each classroom. The air and dust filtering capabilities of unit ventilators is very limited and a large percentage of the particulate matter in the air brought from outside the building enters the classrooms. Remaining areas of the building are ventilated by central air handling units.

The New York Board of Education cleaned air-handling units and associated supply air ductwork in other schools in the immediate area of Ground Zero. However, it is our understanding that the ductwork at Stuyvesant High School has not been cleaned. Similar cleanings of the ductwork should be done at Stuyvesant High School. We also understand that the Board of Education is upgrading the quality of the air filters in the air-handling units. With the exception of AC-1, the new filters being installed in the central air handlers at Stuyvesant do not provide a high level of filtration and essentially do not block contaminants from entering the building. An attempt should be made to install filters similar to the 95% efficient bag filters being installed in AC-1.

The investigation concludes that although some steps are being taken to improve the air quality in the common areas in Stuyvesant High School, improvement in the classrooms is not being addressed. Currently there are not filtering systems available for installation in unit ventilators that will improve the quality of the air introduced into he classrooms via these unit ventilators. The most effective method of reducing the introduction of contaminants into the classrooms is to de-activate the ventilation features of the unit ventilators and supply clean filtered air directly into the classrooms, from a central system. This can be most readily accomplished by modifying the school's central corridor ventilation system so that it may be utilized to supply cleaner ventilation air to each classroom.

## OPTIONS

Several methods of improving the filtration of were considered.

1. Increase the air filtering capabilities of the classroom Unit Ventilators.
2. Introduce a new ventilation system, independent of the Unit Ventilators, to supply the required ventilation to each classroom. The new system would include high capacity, high efficiency filtration reducing the contaminants introduced into the classrooms.
3. Modifying one of the existing building central ventilation systems to improve its air filtration capabilities and arrange its distribution system to supply the required ventilation air to the classrooms

## ANALYSIS

Option 1, Increase quality of air filters in the Unit Ventilators. The Board of Education, for several weeks, has been testing various filtering medial in unit ventilators in several schools in the immediate area of Stuyvesant High School. These tests have been inconclusive and have not resulted in any of the filtering media tested reducing the amount of contaminants being introduced into the building through the unit ventilators. Replacement of filtering media in the Unit Ventilators is therefore not acceptable.

Option 2, Install a new classroom ventilation system will eliminate the requirement to ventilate the classrooms via the Unit Ventilators. Although a very positive, controlled solution the time required to develop and install a new system along with high associated costs is prohibitive.

Option 3, Modify and existing central air conditioning system to provide the required ventilation to each classroom. Presently there are two air conditioning systems dedicated to ventilating the building corridors. Modifying these systems to increase the level of air filtration of the air being introduced to the building and making minimum revisions to the distribution ductwork can result in supplying an improved quality of air into each of the classrooms. In conjunction with this change a new corridor ventilation system must be developed to assure proper air balance within the building. This new corridor system can achieve satisfactory results with a minimum distribution system.

## RECOMMENDATION

The Board of Education must insure that all air-handling units and ductwork at Stuyvesant High School are properly cleaned and that highest efficiency filters possible are installed in all ventilation units.

Option 3, Modification of the two existing corridor Air Conditioning systems and providing a new supplemental corridor system, to assure proper air balance (the building should be positively pressurized to the outside) will provide positive results in the minimum time frame.

The system modification will include upgrading of the filtration system to a minimum 90/95% efficiency and extending the existing corridor system ductwork by directly connecting the distribution ductwork into each classroom. A new supplemental corridor system must then be developed to supply air required in the corridor to assure a proper air balance.

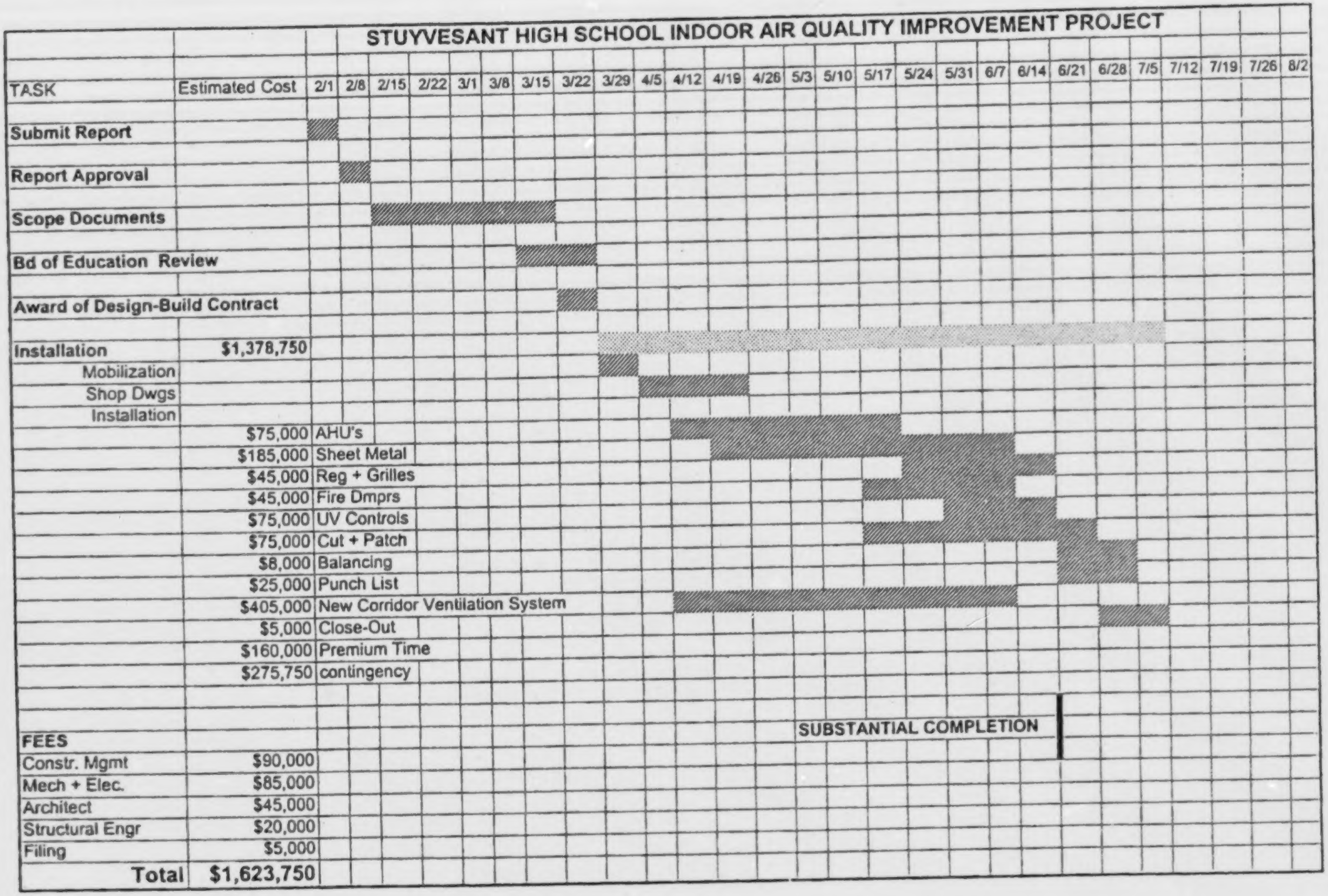
At the request of the Parents Association, use of HEPA filters will be considered.

Employment of a "Design-Build" contractor will accomplish the work described in the minimum time. Preparation of a Scope of Work in conjunction with the contractor can permit construction to start on March 29th and be substantially completed June 18th. Installing contractor's punch list completion and closeout will occur after this time. The time schedule may be affected by time required to assemble the design team, coordinate the work with the Board of Education, and the accessibility of the construction area to the installing contractor. If the school can be temporarily vacated and construction work is performed around the clock 7 days a week, the scheduled time can be reduced substantially.

## BUDGET

The budget for the conceptual design for this project, including fees and construction management, is $1,650,000 per the attached estimate of costs. It must be recognized that a firm design has not been established and that this budget will require verification after the preliminary design is developed.

# STUYVESANT HIGH SCHOOL INDOOR AIR QUALITY IMPROVEMENT PROJECT



| TASK | Estimated Cost | | 2/1 | 2/8 | 2/15 | 2/22 | 3/1 | 3/8 | 3/15 | 3/22 | 3/29 | 4/5 | 4/12 | 4/19 | 4/26 | 5/3 | 5/10 | 5/17 | 5/24 | 5/31 | 6/7 | 6/14 | 6/21 | 6/28 | 7/5 | 7/12 | 7/19 | 7/26 | 8/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Submit Report** | | | ▨ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Report Approval** | | | | ▨ | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Scope Documents** | | | | | ▨ | ▨ | ▨ | ▨ | ▨ | | | | | | | | | | | | | | | | | | | | |
| **Bd of Education Review** | | | | | | | | | ▨ | ▨ | | | | | | | | | | | | | | | | | | | |
| **Award of Design-Build Contract** | | | | | | | | | | ▨ | | | | | | | | | | | | | | | | | | | |
| **Installation** | $1,378,750 | | | | | | | | | | ░ | ░ | ░ | ░ | ░ | ░ | ░ | ░ | ░ | ░ | ░ | ░ | ░ | ░ | ░ | | | | |
| Mobilization | | | | | | | | | | | ▨ | | | | | | | | | | | | | | | | | | |
| Shop Dwgs | | | | | | | | | | | | ▨ | ▨ | ▨ | | | | | | | | | | | | | | | |
| Installation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | $75,000 | AHU's | | | | | | | | | | | ▨ | ▨ | ▨ | ▨ | ▨ | | | | | | | | | | | | |
| | $185,000 | Sheet Metal | | | | | | | | | | | | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | | | | | | | | |
| | $45,000 | Reg + Grilles | | | | | | | | | | | | | | | | | ▨ | ▨ | ▨ | ▨ | | | | | | | |
| | $45,000 | Fire Dmprs | | | | | | | | | | | | | | | | ▨ | ▨ | ▨ | ▨ | | | | | | | | |
| | $75,000 | UV Controls | | | | | | | | | | | | | | | | | | ▨ | ▨ | ▨ | | | | | | | |
| | $75,000 | Cut + Patch | | | | | | | | | | | | | | | | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | | | | | | |
| | $8,000 | Balancing | | | | | | | | | | | | | | | | | | | | | ▨ | ▨ | | | | | |
| | $25,000 | Punch List | | | | | | | | | | | | | | | | | | | | | ▨ | ▨ | | | | | |
| | $405,000 | New Corridor Ventilation System | | | | | | | | | | | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | ▨ | | | | | | | | |
| | $5,000 | Close-Out | | | | | | | | | | | | | | | | | | | | | | ▨ | ▨ | | | | |
| | $160,000 | Premium Time | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | $275,750 | contingency | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **FEES** | | | | | | | | | | | | | | | SUBSTANTIAL COMPLETION | | | | | | | | | | | | |
| Constr. Mgmt | $90,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mech + Elec. | $85,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Architect | $45,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Structural Engr | $20,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filing | $5,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total** | **$1,623,750** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Prepared by Cosentini Associates
January 24, 2002

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**Burns and Roe Enterprises, Inc.**
800 Kinderkamack Road, Oradell, New Jersey 07649
NJ (201) 265-2000  NY (212)563-7700

January 25, 2002

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 – HVAC Filtration

Mr. Charles Collins, NYC BOE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

Attached is payment requisition #3 for $32,593.97 ($31,835.20 Labor and $758.77 Reimbursable). This requisition includes charges associated with the additional; filtration for "ground zero" schools. Expenses through January 11, 2002 have been included.

Should you have any questions or require additional information, please call.

Very truly yours,

Bill Urban, P.E.

Ground Zero Consultant costs

OK for payment
CM Collins
2/5/02

BURNS AND ROE ENTERPRISES, INC.
800 KINDERKAMACK ROAD
ORADELL, NEW JERSEY 07649

NYC - BOARD OF EDUCATION
28-11 QUEENS PLAZA NORTH
LIC, NY 11101

CUSTOMER NO. : 111500

INVOICE NO. : 116854

INVOICE DATE : JANUARY 25, 2002

PROJECT NO. : 02469002

REF. NO.: PO 3480219,RFP 10-01

PROJECT MGR. : URBAN, WILLIAM J.

| DESCRIPTION | TOTAL AMOUNT |
|---|---|
| PROJECT: 02469002 STYVESANT HS AIR QUALITY & FILTRATION | |
| TO INVOICE REQUISITION NO. 3 | $32,593.97 |
| SUBTOTAL - COST | $32,593.97 |
| **TOTAL THIS INVOICE** | $32,593.97 |

| | |
|---|---|
| *** TOTAL GROSS COST: | |
| CURRENT COST: | $32,593.97 |
| PREVIOUSLY INVOICED: | 15,975.23 |
| CUMULATIVE COST: | $48,569.20 |
| *** TOTAL RETENTION: | |
| CUMULATIVE COST: | $.00 |
| *** TOTAL NET COST: | |
| CURRENT COST: | $32,593.97 |
| PREVIOUSLY INVOICED: | 15,975.23 |
| CUMULATIVE COST: | $48,569.20 |

PLEASE REMIT TO: BURNS AND ROE ENTERPRISES, INC.
P.O. BOX 198842, ATLANTA, GA 30384-8842

INVOICE PREPARED BY MECKY MARTINO 201-986-4661 C1

**Burns and Roe Enterprises, Inc.**
800 Kinderkamack Road, Oradell, New Jersey 07649
NJ (201) 265-2000 NY (212)563-7700

January 25, 2002

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281

Mr. Charles Collins, PE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

We have prepared the attached Summary Of Work For Stuyvesant High School for your use.

Should you have any questions or require additional information, please do not hesitate to call me at 201 986 4094.

Very truly yours,

Bill Urban, P.E.
Project Manger

Cc J Smarr (NYC BOE)
N. GAWLOWICZ

2002 JAN 30 AM 10:03
[illegible] ENGINEERING

**NEW YORK CITY BOARD OF EDUCATION**

# SUMMARY OF WORK STUYVESANT HIGH SCHOOL

**NEW YORK CITY BOARD OF EDUCATION**

*HVAC Upgrades*

**NEW YORK CITY BOARD OF EDUCATION**
Division of School Facilities
28-11 Queens Plaza North
New York, NY 11101
**January 25, 2002**

**Prepared by:**

**BURNS AND ROE ENTERPRISES**
**800 Kinderkamack Road**
**Oradell, NJ 07649**
**(201) 265-2000**
**One Blue Hill Plaza**
**Suite 1429**
**Pearl River, NY 10965**
**(914) 627-0027**

# SUMMARY OF WORK FOR
# STUYVESANT HIGH SCHOOL

## SUMMARY OF WORK

The HVAC upgrade program consisted of the following:

- Increase particulate filtration of the building air handlers by installing higher efficiency after filters and providing an additional set of pre-filters for each air-handling unit.

### Filter Upgrade of HVAC-1

Provide additional latching clips to retrofit existing frame to accommodate bag after-filer in addition to pre-filter.

Pre-Filter: D-Mark Odor Guard - Carbon Activation and Particulate Filter

After-Filter: Bag Filter 95% efficiency @ 1 micron - See attached test lab filter data

### Filter Upgrade of HVAC-2

Pre-Filter: D-Mark Odor Guard - Carbon Activation and Particulate Filter

After-Filter: 4 Ply Tri-Dim Pleated Filter

Add new Filter Rack for pre-filter in outside air plenum.

### Filter Upgrade of HVAC-4, 5, 6, 7, 8, 9, 10, 11, 12 and 13, HV-1

Pre-Filter: D-Mark Odor Guard - Carbon Activation and Particulate Filter

After-Filter: 4 Ply Tri-Dim Pleated Filter

Add new Filter Rack for pre-filter in mixed air plenum - Add at 45 degree angle to maximize area as required.

### Unit Ventilators

Converted 1" existing filter in each of the apprximatly300 classroom unit ventilators and provided 2" D-Mark Odor Guard - Carbon Activation and Particulate Filter.

### Scope of Work

The following services were performed:

Provide air balance services including baseline air measurement, Construct new outside air filter racks and provide new pre-filters and after-filters as specified above.

Provide modification of each classroom Unit Ventilators to provide additional filtration.

Provide air balance services to air balance system after filter modifications and repeat baseline air measurement data taken before the filter modifications.

Retrofit work will be performed to accommodate increased static pressure of the new Central Air Handling Unit filters.

Contractor to provide static pressure gauges on all new Central Air Handling Unit filter racks and on existing as required.

Choral Room

To provide adequate ventilation to the choral room a RUPP environmental air cleaner will be installed. The unit is provided with the following:

CFM rating: 1650

Motor HP: ¾

| | |
|---|---|
| Filter Package: | One 4" pleat 30% |
| | One 95% bag |
| | One Carbon Filter - 20 lb. |
| | One 2" pleat 30% |

Attachments

1. Summary of air handlers, CFM provided by central systems.
2. Filter Data

# Summary of air handlers

STUYVESANT HIGH SCHOOL AIR HANDLER UNIT SCHEDULE

| STUYVESANT HIGH SCHOOL AIR HANDLER UNIT SCHEDULE | | | | | | | | | FILTER DATA | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit # | Location | Service | CFM | Total SP | MHP | BHP | Min OA | % O/A. | Total Area (sq. ft.) | w.g. (min) | w.g. (max) | Face Vel. (ft/min) |
| HVAC-1 | Roof MER | Corridors 3-10 Fl. | 55,100 | 3.5 | 50 | 40.6 | 5,510 | 10% | 120 | 0.2 | 0.6 | 460 |
| HVAC-2 | Roof MER | Corridors 1-2 Fl. | 28,380 | 3.5 | 30 | 27.1 | 2,800 | 10% | 94.6 | 0.2 | 0.6 | 300 |
| HVAC-3 | 4th Fl. MER | Auditorium | 16,000 | 3 | 15 | 22 | 9,960 | 62% | 34.9 | 0.2 | 0.6 | 458 |
| HVAC-4 | 4th Fl. MER | Auditorium - Stage | 13,000 | 3 | 15 | 9.8 | 1,935 | 15% | 26.6 | 0.2 | 0.6 | 488 |
| HVAC-5 | 2nd Fl. MER | Aud - Lect. Rm. | 5,000 | 3 | 5 | 3.8 | 1,800 | 36% | 11.1 | 0.2 | 0.6 | 450 |
| HVAC-6 | 2nd Fl. MER | Aud - Lect. Rm. | 5,000 | 3 | 5 | 3.8 | 1,800 | 36% | 11.1 | 0.2 | 0.6 | 450 |
| HVAC-7 | Gym Roof | Gymnasium | 17,600 | 2.5 | 20 | 12.8 | 17,600 | 100% | 41 | 0.2 | 0.6 | 429 |
| HVAC-8 | Gym Roof | Gymnasium | 17,600 | 2.5 | 20 | 12.8 | 17,600 | 100% | 41 | 0.2 | 0.6 | 429 |
| HVAC-9 | Roof | Lockers | 14,400 | 3.25 | 20 | 12.4 | 14,400 | 100% | 48 | 0.2 | 0.6 | 351 |
| HVAC-10 | Roof | Cafeteria | 17,600 | 3.25 | 20 | 15.6 | 17,600 | 100% | 54.7 | 0.2 | 0.6 | 363 |
| HVAC-11 | Roof | Interior | 9,200 | 3 | 15 | 9.41 | 4,300 | 47% | 26.2 | 0.2 | 0.6 | 350 |
| HVAC-12 | 1st Fl. | Music dept | 7,200 | 3 | 15 | 9.4 | 1,635 | 23% | 15.9 | 0.2 | 0.6 | 452 |
| HVAC-13 | Low Roof | Aux. Gym | 12,000 | 2.75 | 15 | 11.1 | 12,000 | 100% | 26.2 | 0.2 | 0.6 | 468 |
| HV-1 | Basement | Cellar | 9,200 | 2 | 7.5 | 4.93 | None shown | 100% | 22.24 | 0.6 | 414 | 468 |
| | | | 218,080 | | | | 108,940 | 50% | | | | |

## Selection Guide

| Model | ASHRAE Efficiency | Nominal Size (WxHxD) | No. of Pockets | Rated Capacity C.F.M. | Initial Resistance | Recommended Final Resistance |
|---|---|---|---|---|---|---|
| SP-95 | 95% | 12x24x30<br>24x24x30<br>20x24x30 | 3<br>6<br>5 | 1000<br>2000<br>1600 | .43" W.G.<br>.43" W.G.<br>.43" W.G. | 1.5" W.G. |
| SP-90 | 90-95% | 12x24x30<br>24x24x30<br>20x24x30 | 4<br>8<br>6 | 1000<br>2000<br>1600 | .43" W.G.<br>.43" W.G.<br>.43" W.G. | 1.5" W.G. |
| SP-80 | 80-85% | 12x24x30<br>24x24x30<br>20x24x30 | 4<br>8<br>6 | 1000<br>2000<br>1600 | .41" W.G.<br>.41" W.G.<br>.41" W.G. | 1.5" W.G. |
| SP-65 | 65-70% | 12x24x30<br>24x24x30<br>20x24x30 | 4<br>8<br>6 | 1000<br>2000<br>1600 | .38" W.G.<br>.38" W.G.<br>.38" W.G. | 1.5" W.G. |
| SP-50 | 50-55% | 12x24x20<br>24x24x20<br>20x24x20 | 3<br>5<br>4 | 1000<br>2000<br>1600 | .27" W.G.<br>.27" W.G.<br>.27" W.G. | 1.5" W.G. |
| SP-40 | 40-45% | 22x24x20<br>24x24x20<br>20x24x20 | 3<br>6<br>5 | 1000<br>2000<br>1600 | .18" W.G.<br>.18" W.G.<br>.18" W.G. | 1.5" W.G. |

# SUGGESTED PRODUCT SPECIFICATIONS

## DESCRIPTION

Filters shall be SYN-PAC (note 1) high performance extended surface pocket type filters. Each filter shall consist of SYN-PAC (note 1) filter media formed into individual dust trapping pockets, and affixed to a corrosion resistant header frame; (SP-95, SP-90, SP-80, and SP-65 are furnished with extruded aluminum headers for extra rigidity and corrosion resistance). Filters shall meet U.L. Class II.

## FILTER MEDIA

Shall consist of layers of "SYN-PAC 95% electrically enhanced or "SYN-PAC (note 2)" synthetic fibers, built up into a permanently bonded, non-woven media.

## POCKET DESIGN

Pockets shall consist of sewn or heat sealed SYN-PAC medias bonded to a non-woven, non-shedding backing. The pocket channels shall be such that each pocket forms an even air flow tunnel, resulting in uniform velocities, and dust loading throughout the depth of the pocket. The throat of each pocket shall be firmly bonded to individual pocket hoops, pre-forming the pocket openings, and GUARANTEEING uniform air flow.

## POCKET HOOPS AND HEADER FRAME

Pocket hoops shall provide uniform spacing of pockets, and shall have double bend construction for safety and rigidity. Individual pocket hoops shall be enclosed in a corrosion resistant metal header, (SP-95, SP-90, SP-80, and SP-65 filters are manufactured with extruded aluminum headers for extra rigidity and corrosion resistance), and mechanically fastened to adjacent pockets. Header frames shall be 13/16" or 1½" thick.

## PERFORMANCE

SYN-PAC (note 3) Filters shall have an initial resistance of (notes 3) inches W.G., an initial atmospheric dust spot efficiency of (note 4)%, an average atmospheric dust spot efficiency (note 5)%, and an average dust weight arrestance of (note 6)%, when tested in accordance with ASHRAE Standard 52-76.

## CERTIFICATION

Manufacturers shall qualify their products by testing them in accordance with ASHRAE Standard 52-76, and b providing a certified copy of the test report with their quotation.

## CONSTRUCTION FILTERS

Two sets of filters shall be provided. One set shall be installed just prior to testing and balancing the sytem.

## NOTES

Note ❶ 95, 90, 80, 65, 50, or 40

Note ❷ 90, 80, 65, 50, or 40

Note ❸ SP-95 - .43" SP-65 - .38"
SP-90 - .43" SP-50 - .27"
SP-80 - .41" SP-40 - .18"

Note ❹ SP-95 - 97.9% SP-65 - 30.9%
SP-90 - 80.0% SP-50 - 21.6%
SP-80 - 57.6% SP-40 - 11.1%

Note ❺ SP-95 - 96.0% SP-65 - 65.1%
SP-90 - 89.9% SP-50 - 47.4%
SP-80 - 79.8% SP-40 - 41.9%

Note ❻ SP-95 - 100.0% SP-65 - 99.3%
SP-90 - 100.0% SP-50 - 97.0%
SP-80 - 99.7% SP-40 - 94.7%

***SYN-PAC extended surface filters are also availabl in a rigid design. Contact the factory for specifications and performance data.

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## PRODUCT DESCRIPTION

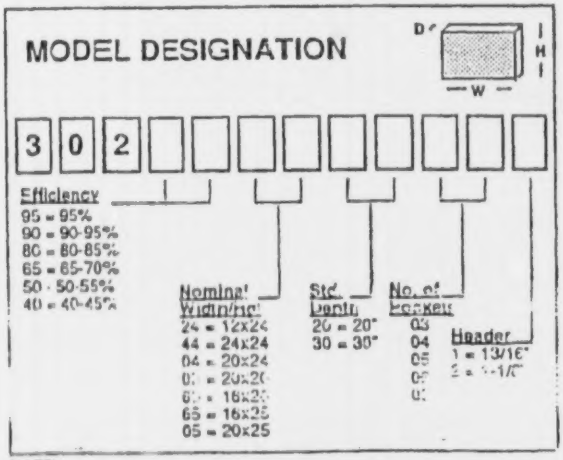
TRI-DIM™ Filter Corporation's family of all synthetic fiber extended surface pocket type filters offer medium and high efficiency cleaning capabilities for many critical applications; For HOSPITALS, PHARMACEUTICAL manufacturing plants, PAINT SPRAY BOOTHS, TURBINE installations, OFFICE BUILDINGS, or in any application where high efficiency is essential, and fiber shedding is a concern.

SYN-PAC filters consist of a series of synthetic media pockets built up in non-woven layers to ensure mechanical "filter-cake" buildup and eliminate fiber shedding. The media is a combination of needlefelted and thermally bonded synthetic microfibers that are extremely durable, and totally resistant to damage caused by turbulent air, or mishandling. Since the fibers are thermally bonded, they are unaffected by extreme moisture or humidity conditions, unlike microglass fiber filters that can loose up to 20 percent of their efficiency when wet.

SYN-PAC extended surface pocket type filters are offered in six distinct ASHRAE efficiency ranges, and are rated up to 2500 CFM. They are: 40%-45%, 50-55%, 65-70%, 80-85%, 90-95%, and 95%. ALL SYN-PAC filters are tested in accordance with ASHRAE Standard 52-76.

## FEATURES — BENEFITS

- Totally synthetic media; contains no glass fibers.
- Pockets are totally sealed to insure leak-free operation
- Pockets are self-supporting insuring total media utilization even in variable air volume systems.
- Pockets are mechanically affixed to individual aerodynamically designed hoops guaranteeing unifor air flow and total media utilization.
- Corrosion resistant extruded aluminum header guarantees structural integrity, and will not crack or of gas in operation.
- Meets U.L. Class II requirements.



MODEL DESIGNATION

3 | 0 | 2 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐

Efficiency
95 = 95%
90 = 90-95%
80 = 80-85%
65 = 65-70%
50 - 50-55%
40 = 40-45%

Nominal Width/Ht
24 = 12x24
44 = 24x24
04 = 20x24
0[illegible] = 20x20
6[illegible] = 16x2[illegible]
65 = 16x25
05 = 20x25

Std. Depth
20 = 20"
30 = 30"

No. of Pockets
03
04
05
0[illegible]
0[illegible]

Header
1 = 13/16"
2 = [illegible]-1/[illegible]"

NOTES:
- "Other" designations must be explained in body of order.
- Actual face dimensions are 5/8" less than nominal - 24" x 24" nominal — Actual face dimensions are 23-3/8" x 23-3/8"
- Filter depth is measured from the front of the header to the end of the pocket, excluding loops. Depth dimensions have 1/2" tolerance.

SYN-PAC 95 Filters operate above 95%, RATED EFFICIENCY, from the moment of installation. Microglass and other manufacturer's synthetic fiber pocket type filters operate below their rated efficiency for up to TWO-THIRDS of their service life. SP-95 filters consist of a series of synthetic microfiber pockets, electrically enhanced for increased initial efficiency. The synthetic fibers are builtup in non-woven layers to guarantee mechanical filter-cake buildup, and eliminate fiber attrition.

SP-95 Filters are used in extremely critical applications, such as Hospital Surgical systems, Pharmaceutical manufacturing plants, Laboratories, State-Of-The-Art Automotive Paint Booths, or in any application where clean air is Critical, and fiber shedding is a concern.

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Bag Filters
Specs.

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# 4 PLY

# TRI-DEK XL™
## INTERNAL RING PANEL AND LINK FILTER

---

# STATE OF THE ART FILTRATION FOR THE 90'S AND BEYOND

TRI-DEK XL Internal Panel & Link Filters

TRI-DIM™ Filter Corporation revolutionized the air iltration industry in the 60's with the introduction of TRI-DEK internal ring panels and link filters. A *NEW* filter concept was introduced that provided three times the efficiency and service life of fiberglass, paper framed panel filters but eliminated their inherent problems. TRI-DEK filters are self-gasketing, impervious to moisture and nost corrosive atmospheres, and do not shed even when ully loaded. TRI-DEK's utilization of three principles of iltration "in harmony," viscous impingement, straining, and interception were unheard of in the air filtration industry. TRI-DEK, available in panels, links, cubes, pads, and bulk rolls has passed the test of time and today emains "state-of-the-art" in filtration.

### PERFORMANCE COMPARISON TRI-DEK XL vs. TRI-DEK 15/40 3-PLY

| | TRI-DEK XL 4-PLY | | | | TRI-DEK 15/40 3-PLY | | | |
|---|---|---|---|---|---|---|---|---|
| NOMINAL SIZES | CAPACITY CFM @ 400 FPM | INITIAL RESIST. IN. W.G. | CAPACITY CFM @ 500 FPM | INITIAL RESIST. IN. W.G. | CAPACITY CFM @ 400 FPM | INITIAL RESIST. IN. W.G. | CAPACITY CFM @ 500 FPM | INITIAL RESIST. IN. W.G. |
| 10 x 20 | 550 | .34 | 700 | .44 | 550 | .23 | 700 | .30 |
| 12 x 2[illegible] | 600 | .3[illegible] | 10[illegible] | .4[illegible] | 600 | .2[illegible] | 1000 | .30 |
| 15 x 20 | 850 | .34 | 1150 | .44 | 850 | .23 | 1150 | .30 |
| 16 x 20 | 900 | .34 | 1200 | .44 | 900 | .23 | 1200 | .30 |
| [illegible] | 110[illegible] | .3 | 1[illegible] | .4 | 110 | [illegible] | 140[illegible] | [illegible] |
| [illegible] | 12[illegible] | .3 | 15[illegible] | — | 12[illegible] | [illegible] | 15[illegible] | [illegible] |
| 20 x 20 | 1100 | .34 | 1400 | .4[illegible] | 1100 | .23 | 1400 | .30 |
| 20 x 2[illegible] | 135[illegible] | .3 | 170[illegible] | .4[illegible] | 1350 | .23 | 1700 | .30 |
| 20 x 2[illegible] | 140[illegible] | .3 | 175[illegible] | .4 | 140[illegible] | .2[illegible] | 175[illegible] | .30 |
| 24 x 2[illegible] | 160[illegible] | .3 | 200[illegible] | .4 | 160[illegible] | [illegible] | 200[illegible] | .30 |
| 25 x 2[illegible] | 170[illegible] | .3 | 212[illegible] | .4 | 170[illegible] | .2[illegible] | 212[illegible] | .3[illegible] |

Recommended Final Resistance 1.0" w.g.

## INTRODUCING TRI-DEK XL 4-PLY RING PANELS & LINKS

TRI-DIM™ Filter Corporation proudly presents "STATE-OF-THE-ART" filtration for the 90's and BEYOND. TRI-DEK XL offers all the structural features that made our TRI-DEK revolutionary in the 60's, but with increased efficiency, and 30% more service life. TRI-DEK XL's performance has been demonstrated time and again in lab tests and field evaluations.

## SPECIFICATION

TRI-DEK — A 4-Ply multi-graduated laminant of tough, variable denier synthetic fibers, permanently bonded for extraordinary filtration efficiency, strength and durability. The revolutionary structuring features pre-crimped fibers in laminates, each graduating downward in diameter, forming millions of intersticed, funnel shaped contaminant traps. TRI-DEK XL's interceptor stations are arranged by design to arrest and permanently retain, in depth, all solid particulate matter in proportion to their micron size without interrupting uniform air flow. TRI-DEK XL combines the impingement, strainer, and interception methods of filtration to create "FILTRATION IN HARMONY."

## PRODUCT BENEFITS

- Increased efficiency vs. 3-Ply gradient density filters.
- 30% greater service life vs. 3-Ply gradient density filters.
- Total utilization of filter face area as opposed to only 70% or less with paper framed panel or pleated filters.
- Pre-crimped 100% Dacron® fibers are unaffected by moisture, or most corrosive atmospheres.
- Integral gasket selvedge edge and exclusive friction fit prevent dirty air bypass, and eliminate the need for additional hardware or holding devices.
- Non-Toxic, Non-Allergenic, and Non-Shedding. Will not support growth of bacteria, as opposed to paper framed filters.
- Unitized internal wire frame, and heat sealed, laminated construction eliminates filter collapse, fiber breakoff and possible contamination carry-over.

To satisfy all building codes, TRI-DEK Panels, Links and Cubes are available with UL and ULC Class I and Class II Ratings. (Ref. R6378).

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# TRI-DEK XL™
## 4 PLY CUBE FILTER

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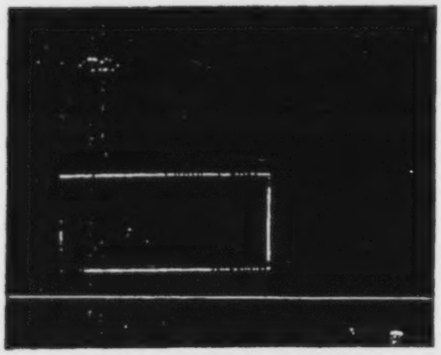
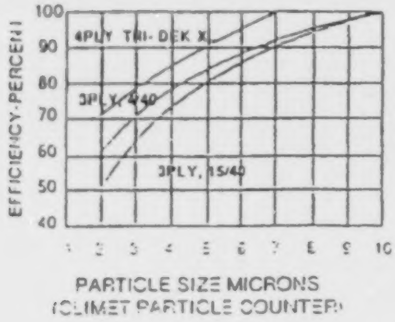
# STATE OF THE ART FILTRATION FOR THE 90'S AND BEYOND



Self Supported Cube Filter

I-DIM™ Filter Corporation introduces "STATE-OF-THE-T" filtration for the 90's and beyond. The TRI-DEK XL 'ly Cube Filter incorporates three filtration principles, ɔingement, straining, and interception, "in harmony" to ıvide an exceptional alternative to medium efficiency ɘrglass bag filters, 4" pleated filters, and basket ɔported filter systems. TRI-DEK XL CUBE filters are f-supported cube shaped filters, designed to fit any sting system without the need of adapters. TRI-DEK XL IBE filters are self-gasketing, eliminating dirty air ɔass. A non-toxic, non-allergenic, non-migrating kifier is employed between the last two laminates of the I-DEK XL Cube to insure positive filter cake build-up, ɟ prevent the downstream migration of collected ıtaminants.

### EFFICIENCY vs. PARTICLE SIZE



## HIGH DUST HOLDING CAPACITY 4 PLY CONSTRUCTION

Large particles are captured in first layer, with progressively smaller particles captured in final three layers.

PERFORMANCE DATA

| NOMINAL SIZE | CFM | INITIAL RESISTANCE |
|---|---|---|
| 12 x 24 x 10 | 800 | .24 |
| 16 x 20 x 10 | 900 | .24 |
| 16 x 25 x 10 | 1100 | .24 |
| 20 x 20 x 10 | 1100 | .24 |
| 20 x 25 x 10 | 1350 | .24 |
| 24 x 24 x 10 | 1600 | .24 |
| 12 x 24 x 15 | 1000 | .24 |
| 16 x 20 x 15 | 1200 | .24 |
| 16 x 25 x 15 | 1400 | .24 |
| 20 x 20 x 15 | 1400 | .24 |
| 20 x 25 x 15 | 1750 | .24 |
| 24 x 24 x 15 | 2000 | .24 |
| 12 x 24 x 20 | 1250 | .28 |
| 16 x 20 x 20 | 1400 | .28 |
| 16 x 25 x 20 | 1750 | .28 |
| 20 x 20 x 20 | 1750 | .28 |
| 20 x 25 x 20 | 2100 | .28 |
| 24 x 24 x 20 | 2500 | .28 |

## PRODUCT BENEFITS

- Increased efficiency vs. 3-Ply gradient density cube filters.
- 30% greater service life vs. 3-Ply gradient density cube filters.
- Pre-crimped 100% Dacron™ fibers are unaffected by moisture and most corrosive atmospheres.
- Non-toxic, non-allergenic, and non-shedding.
- Will not support growth of bacteria as opposed to paper framed filters.
- Integral gasket selvedge edges and exclusive friction fit prevent dirty air bypass and eliminate the need for additional hardware or holding devices.
- Unitized internal wire frame, and heat sealed, laminated construction eliminates filter collapse, fiber breakoff and possible contamination carry-over.
- To satisfy all building codes, TRI-DEK Panels, Links and Cubes are available with UL and ULC Class I and Class II Ratings. (Ref. R8378).

---

TRI DIM
FILTER CORPORATION

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# OdorGuard

## Granular Activated Carbon Filters For HVAC Systems

Many IAQ problems are unpredictable. They can appear suddenly and be a one-time occurrence, or crop up periodically. In either event, making changes in the air handling system to deal with them is not timely or cost effective.

The solution is OdorGuard Filters. They interchange with conventional HVAC filters, and are available for the removal of particulates as well as odors, or for the removal of odors only. Both types are offered in standard and custom sizes in 1" and 2" thicknesses.

To find out more, visit the D-Mark web site, or contact D-Mark customer service and describe your odor control challenge.

## Features:

- **Interchangeable with and/or replaces existing HVAC filters**
- **Three-stage filtration includes:**

| | |
|---|---|
| **Primary** | **- 3/4" polyester media removes particulates** |
| **Secondary** | **- Patented CarbonWeb® media "adsorbs" odors, pollutants** |
| **Tertiary** | **- Polyurethane foam media removes stray particulates or carbon** |

- **Also available as single stage filters for odor removal only (used with separate particulate filtration)**
- **UL tested: Class 2 approved**
- **Low air resistant, non-bypass disposable filter designs offered in capacities for light, moderate or heavy duty applications**
- **Available with standard die-cut beverage board frames, metal frames or in pads (for use in pad holding frames), in standard HVAC or custom sizes**
- **Packaged in polyethylene to preserve capacity and cleanliness**

## Specifications:

| Product | GAC Wts./sq. ft. (grams) | Nominal Thickness | Initial Resistance | | Average Arrestance @ 500FPM | Particulate Capacity (grams) | Final Resistance (in WG) |
|---|---|---|---|---|---|---|---|
| | | | 300FPM | 500FPM | | | |
| OdorGuard I | 100 | 1" | .18 | .42 | 60-65% | 200 | 1.0" |
| OdorGuard II | 200 | 2" | .22 | .51 | 70-75% | 205 | 1.2" |
| OdorGuard III | 300 | 2" | .31 | .75 | 80-86% | 235 | 1.2" |
| OdorGuard 300 Pad* | 300 | 1" | .25 | .54 | N/A | N/A | ** |
| OdorGuard 600 Pad* | 600 | 2" | .47 | 1.05 | N/A | N/A | ** |

**Data in accord with ANSI/ASHRAE 52.1 - 1992 test method. Variations will occur during production, therefore this data should be used only as a guide.**

* **CarbonWeb® media only, without primary or tertiary filters, available in pads, die-cut beverage board frames or metal frames.**

** **OdorGuard Pads (when used with separate pre-filters for particulate removal) should not increase pressure drop during their use. If dust or dirt is found on the pad, pre-filters need to be changed, increased in efficiency, or both.**

**D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.**

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**(914) 238 6945**

D-MARK®
AIR FILTRATION
*A breath of fresh air.*™

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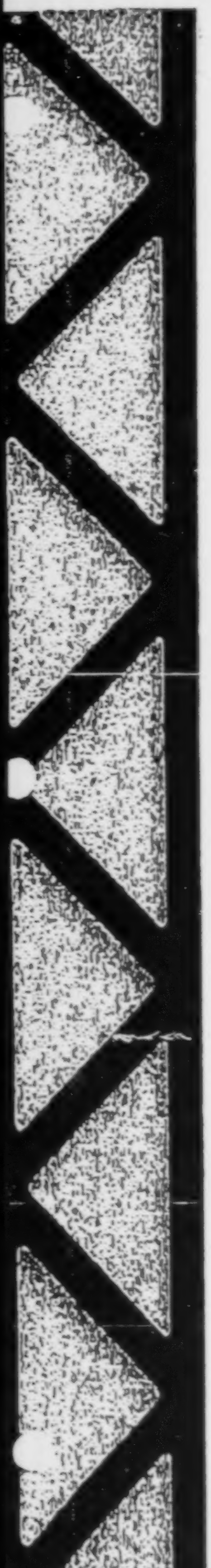
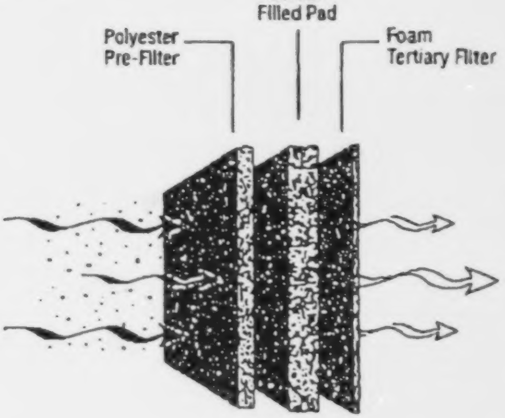


# OdorGuard®

## Granular Activated Carbon Filters For HVAC Systems



### Designed for Removal of:

- Particulates
- Gaseous Pollutants
- Odors

### OdorGuard Filter Applications:

- Office, retail and commercial buildings
- Apartment and lodging complexes
- Industrial plant offices, laboratories and work areas
- Institutional buildings, offices, classrooms
- Disaster remediation and restoration
- Residential air quality problems

No matter what the reason, when indoor air smells bad, people are not very happy about it. Bad air is unpleasant, distracting and potentially unhealthy. OdorGuard Filters from D-Mark can help. Their outer polyester layer removes particulates from indoor air just like conventional HVAC filters. But inside is a core of CarbonWeb® filter media containing 60% activity granular activated carbon which removes odors and gaseous pollution as well. The result is a fresher, more odor-free environment.

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**CarbonWeb® Patented Filter Media**

D-Mark Air Filtration Products are made with CarbonWeb® Filter Media. Using a patented process, media for general odor control is loaded with granular activated carbon. Media for the control of light gases is loaded with other types of adsorbents, either alone or in combination with granular activated carbon. The result is high-efficiency filtration for a variety of odor control challenges.

**D-MARK®**
AIR FILTRATION
*A breath of fresh air.*™

**From:** William Urban [wurban@roe.com]
**Sent:** Friday, January 25, 2002 11:54 AM
**To:** Rrpawl@aol.com
**Cc:** NWalash@aol.com; Collins Charles; Lew King; Gawlowicz Nancy; Frank Ryan; Robert Cascone
**Subject:** HVAC Balancing Data

Robert,

We have been reviewing the preliminary data provided by BSI for air balancing work, and noticed some discrepancies in the data. We understand this information is preliminary, however in order for us to proceed and make additional recommendations to get the fans to the original design data, we need final "certified" baseline data to evaluate.
Please provide the data, or a date when we may expect the data for the following schools

Baseline (before HVAC Modifications)
Styvesant - Completed
234 - Completed
89 Completed

Baseline (after filter Modification)
Styvesant - Completed
234 - Completed
89 - Completed
Trinity - Completed
90 - Completed
100 - Completed

Bill Urban
Burns and Roe Enterprises
800 Kinderkamack Road
Oradell, NJ 07649
201 986 4094
201 986 4016 (Fax)
burban@roe.com

R CASCONE

460 MORGAN AVE., BKLYN, NY 11222
718-388-5500
F-718-388-2017

**AWL INDUSTRIES, INC.**

# Fax

| | | | |
|---|---|---|---|
| **To:** | BURNS & ROE<br>ATTN: ROBERT CASCONE | **From:** | GLADYS |
| **Fax:** | 201-986-4016 | **Pages:** | 18 |
| **Phone:** | | **Date:** | 1/31/2002 |
| **Re:** | GROUND ZERO PROPOSALS | **CC:** | JOB FILE |

☐ **Urgent** ☑ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

- **Comments:**

ATTACHED PLEASE FIND CONTRACTORS PROPOSALS FOR ALL GROUND ZERO SCHOOLS AS REQUESTED.

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# Contractor's Proposal

**Job Order Contract**

Date: 01/30/2002

**Basic Project Information** 00-397-040

| | | |
|---|---|---|
| Contractor: | AWL Industries Inc - HVAC | Region |
| Contract Number: | 0011J-00 | |
| Project Number: | 01:M477.001.0 | |
| Project Name: | HVAC Rehabilitation | |
| Project Location: | M477 - Stuyvesant High School | |

## Section 01-General Conditions

| Sect. | Item | Mod. | UOM | Description | Quantity | Unit Price | Fact. | Total | Line Total |
|---|---|---|---|---|---|---|---|---|---|
| 01552 | 1034 | | HR | Sheet Metal Worker, Note: Line Items In The UPB Include | | | | | $38,784.70 |
| | | | | Installation | 682.00 x | 55.88 x | 1.0177 = | 38,784.7098 | |
| | | | | Modify Unit Vents for new filters | | | | | |
| | | | | | | | **Subtotal for 01** | | **$38,784.70** |

## Section 15-Mechanical

| Sect. | Item | Mod. | UOM | Description | Quantity | Unit Price | Fact. | Total | Line Total |
|---|---|---|---|---|---|---|---|---|---|
| 15043 | 1001 | | EA | Balancing Centrifugal Fans | | | | | $1,381.89 |
| | | | | Installation | 6.00 x | 226.31 x | 1.0177 = | 1,381.8941 | |
| | | | | Baseline Balancing of Fans | | | | | |
| 15043 | 1001 | 5001 | EA | For Testing Of Unit Without Balancing, Deduct | | | | | $-690.97 |
| | | | | Installation | 6.00 x | -113.16 x | 1.0177 = | -690.9776 | |
| 15043 | 1001 | | EA | Balancing Centrifugal Fans | | | | | $1,381.89 |
| | | | | Installation | 6.00 x | 226.31 x | 1.0177 = | 1,381.8941 | |
| | | | | Final Balancing of fans | | | | | |
| 15043 | 2001 | | EA | Balancing Central A/C Station | | | | | $6,589.35 |
| | | | | Installation | 16.00 x | 431.65 x | 1.0177 = | 6,589.3531 | |
| | | | | Final Balancing of HVAC Equipment | | | | | |
| 15043 | 2001 | | EA | Balancing Central A/C Station | | | | | $6,589.35 |
| | | | | Installation | 16.00 x | 431.65 x | 1.0177 = | 6,589.3531 | |
| 15043 | 2001 | 5001 | EA | For Testing Of Unit Without Balancing, Deduct | | | | | $-3,294.75 |
| | | | | Installation | 15.00 x | -215.83 x | 1.0177 = | -3,294.7529 | |
| 15821 | 1196 | | EA | 2 HP Centrifugal Fan, 27" Wheel, 2734-13266 CFM @ 1/8" Static | | | | | $2,829.37 |
| | | | | Installation | 1.00 x | 2,780.17 x | 1.0177 = | 2,829.3790 | |
| | | | | Carbon / HEPA unit for music room | | | | | |

**Project Proposal Total** **$660,199.90**

The work order proposal total represents the correct total for the proposal. Any discrepancy between line totals, sub-totals and the proposal total are due to rounding of the line totals and sub-totals.

Mr. Craig Levine
Director of Special Project
Office of the Chancellor
New York City Board of Education
110 Livingston Street, Room 1025
Brooklyn, New York 11201

FAX: 718-935-3463
Copy: Mr. Charles Collins: FAX 718-391-6909
Re: 2-01-02 e-mail; Attachments to R. Cascone 2-01-01 e-mail response

The following attachments are provided for your reference regarding the filtration installed at Stuyvesant High School.

Attachment 1: NAFA Guide to Air Filtration
Page 9.5 Table 9.1a – In addition to EPA 2.5PM particulate standards – Burns and Roe has evaluated the indoor air quality at Stuyvesant based on criteria of 1,000,000 particles over .3 um in size. This is comparable to a M6 classification.

Page 10.5 Table 10.1
For all central air handling unit at Stuyvesant we have installed pre-filters (OdorGuard III) and after filters. Tri-Dim 4 ply MERV Rating of 9 and 24"x24"x30" deep bag filter MERV rating of 14.

For the Tri-Dim 4 ply MERV Rating 9 we exceed filter efficiencies for central health care ventilation systems for administrative areas. For the 24"x24"x30" deep bag filter MERV rating of 14 filters (HVAC 1. We exceed the criteria for in-patient care for all health facilities referenced.

Page 12.7 of the Guide indicates a MERV 6 rating for schools. We exceed this criterion for all filters except for the classroom unit ventilators due to the current need to provide a charcoal-activated filter for odor control. These types of filters are not rated per AHSRAE 52.2 test method for particulate filtration. Once odor or VOC filtration is no longer an issue a filter of MERV 9 or MERV 11 can be installed for particulate filtration only.[1]

Attachment 2
OdorGuard Literature
Tri-Dim 4 Ply Filter data and Test Data
Tri-Dim 24"x24"x30" deep Bag Filter Test Data

Attachment 3
WACO Air Filter Application Guide
MERV Ratings 1-20

Attachment 4
PowerGuard Literature – Alternate filter for 4 ply or OdorGuard in Unit Ventilators for particulate filtering only.

Attachment 5
Quote for ParticleScan Counter

Robert Cascone – Burns & Roe

# *NAFA GUIDE TO AIR FILTRATION*

National
Air
Filtration
Association

TH7653
N

**Third Edition, 2001**

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BURNS AND ROE, INC.
ORADELL

**National Air Filtration Association**
**1518 K Street N.W.**
**Washington, D.C. 20005**

ments. These classifications are shown in Table 9.1a.

## ISO 14644-1 Classification of Air Cleanliness

This document is now an official ISO standard. It is the first of eight documents concerned with contamination control. The Institute of Environmental Sciences and Technology (IEST) is the secretariat for Technical Committee 209 of the International Standards Organization (ISO) charged with writing these standards. This standard is expected to replace all other existing ones.

Cleanliness is expressed in terms of an ISO Number for the level of cleanliness required for various size particles 0.1 μm to 5.0 μm. The standard specifically states that particles larger and smaller than this size range are not part of the standard.

Only the SI (metric) system of measurement is used. The cleanliness classes are shown in Table 9.1b.

Table 9.1.a. Classification of Cleanrooms Federal Standard 209E

| Class Name | | Class Limits | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.1 μm | | 0.2 μm | | 0.3 μm | | 0.5 μm | | 5 μm | |
| | | Volume units | | Volume units | | Volume units | | Volume units | | Volume units | |
| SI | English | $(m^3)$ | $(ft^3)$ | $(m^3)$ | $(ft^3)$ | $(m^3)$ | $(ft^3)$ | $(m^3)$ | $(ft^3)$ | $(m^3)$ | $(ft^3)$ |
| M 1 | | 350 | 9.91 | 75.7 | 2.14 | 30.9 | 0.875 | 10 | 0.283 | - | - |
| M 1.5 | 1 | 1,240 | 35 | 265 | 7.5 | 106 | 3 | 35.3 | 1 | - | - |
| M 2 | | 3,500 | 99.1 | 757 | 21.4 | 309 | 8.75 | 100 | 2.83 | - | - |
| M 2.5 | 10 | 12,400 | 350 | 2,650 | 75 | 1,060 | 30 | 353 | 10 | - | - |
| M 3 | | 35,000 | 991 | 7,570 | 214 | 3,090 | 87.5 | 1,000 | 28.3 | - | - |
| M 3.5 | 100 | - | - | 26,500 | 750 | 10,600 | 300 | 3,530 | 100 | - | - |
| M 4 | | - | - | 75,700 | 2,140 | 30,900 | 875 | 10,000 | 283 | - | - |
| M 4.5 | 1,000 | - | - | - | - | - | - | 35,300 | 1,000 | 247 | 7 |
| M 5 | | - | - | - | - | - | - | 100,000 | 2,830 | 618 | 17.5 |
| M 5.5 | 10,000 | - | - | - | - | - | - | 353,000 | 10,000 | 2,470 | 70 |
| M 6 | | - | - | - | - | - | - | 1,000,000 | 28,300 | 6,180 | 175 |
| M 6.5 | 100,000 | - | - | - | - | - | - | 3,530,000 | 100,000 | 24,700 | 700 |
| M 7 | | - | - | - | - | - | - | 10,000,000 | 283,000 | 61,800 | 1,750 |

Class limits are given for each class name. The limits designate specific concentrations (particles per unit volume) of air particles with sizes equal to and larger than the particle sizes shown.

The class limits shown in this table are defined for classification purposes only and do not necessarily represent the size distribution to be found in any particular situation.

Table 10.1

## FILTER EFFICIENCIES FOR HEALTH CARE CENTRAL VENTILATION AND AIR CONDITIONING SYSTEMS

Published by the American Institute of Architects, Academy of Architecture for Health
with Assistance from the U.S. Department of Health and Human Services

| Area Designation | Minimum No. of Filter Beds | Minimum Filter Efficiency (1) | |
|---|---|---|---|
| | | Filter Bed No. 1 | Filter Bed No. 2 |
| **General Hospitals** | | | |
| All areas for In-Patient Care, Treatment, and/or Diagnosis, and those areas providing Direct Service or Clean Supplies such as Sterile and Clean Processing, etc. | 2 | 30% | 90% |
| Protective Environment Rooms | 2 | 30% | 99.97% DOP (HEPA) |
| Laboratories | 1 | 80% | – |
| Administrative, Bulk Storage, Soiled Holding Areas, Food Preparation Areas, and Laundries | 1 | 30% | – |
| Recirculation of air within Individual Isolation Rooms | 1 | 99.97% DOP (HEPA) | – |
| **Psychiatric Hospitals** | | | |
| All areas for In-Patient Care, Treatment and Diagnosis, and those areas providing Direct Service | 2 | 30% | 90% |
| Administrative, Bulk Storage, Soiled Holding, Laundries, Food Preparation areas. | 1 | 30% | – |
| **Nursing Care Facilities** | | | |
| All areas for In-Patient Care, Treatment, and/or Diagnosis, and those areas providing Direct Service or Clean Supplies | 2 | 30% | 80% |
| Administrative, Bulk Storage, Soiled Holding Areas, Food Preparation Areas, and Laundries | 1 | 30% | – |
| **Outpatient Facilities** | | | |
| All areas for Patient Care, Treatment, and/or Diagnosis, and those areas providing Direct Service or Clean Supplies such as Sterile and Clean Processing, etc. | 2 | 30% | 90% |
| Laboratories | 1 | 80% | – |
| Administrative, Bulk Storage, Soiled Holding Areas, Food Preparation Areas, and Laundries. | 1 | 30% | – |

(1) Additional roughing or prefilters should be considered to reduce maintenance required for filters with efficiency higher than 75%. Efficiency ratings shall be based on ASHRAE Standard 52.1-1992.

# AIR FILTER TESTING LABORATORIES, INC.

AFTL

4632 Old LaGrange Road • Crestwood, Kentucky 40014

ASHRAE AIR FILTER TEST STANDARD 52-76
STATICALLY TESTED DEVICES

REPORT NO. 6643
TEST NO. 1
SHEET NO. 1

DEVICE TESTED

TEST REQUESTED BY TRI-DIM FILTER CORPORATION
MANUFACTURER TRI-DIM FILTER CORPORATION
PRODUCT NAME TRI-DEK XL RIMA PANEL FILTER
HOW LABORATORY PROCURED TEST SAMPLE PURCHASED FROM OPEN MARKET
MODEL NO. ______ DIMENSIONS 24 in. H 24 in. W 1.5 in. D

| RATED PERFORMANCE DATA FROM MANUFACTURERS CATALOG NO. | | | DATED | |
|---|---|---|---|---|
| AIR FLOW CAPACITY | | | → | |
| INITIAL RESISTANCE | | | → | |
| FINAL RESISTANCE | | | | |
| INITIAL ATMOSPHERIC DUST SPOT EFFICIENCY | | | | |
| AVERAGE ATMOSPHERIC DUST SPOT EFFICIENCY | | | | |
| AVERAGE SYNTHETIC DUST WEIGHT ARRESTANCE | | | | |
| ASHRAE DUST HOLDING CAPACITY | | | | |

TEST RESULTS

| | | | | |
|---|---|---|---|---|
| TEST AIR FLOW RATE | 1200 | | → | CFM |
| INITIAL RESISTANCE | 0.26 | | → | IN. W.G. |
| FINAL RESISTANCE | | | 1.00 | IN. W.G. |
| INITIAL ATMOSPHERIC DUST SPOT EFFICIENCY | | | 28.8 | % |
| AVERAGE ATMOSPHERIC DUST SPOT EFFICIENCY | | | 39 | % |
| AVERAGE SYNTHETIC DUST WEIGHT ARRESTANCE | | | 94 | % |
| ASHRAE DUST HOLDING CAPACITY | | | 403 | Gm. |

TEST SECTION DUCT SIZE 24 in. X 24 in. DUST FEEDING RATE 2.0 Gm/1000 CF

SEE BACK SIDE (PAGE 1A) FOR PERFORMANCE CURVES

PHYSICAL DESCRIPTION

FACE DIMENSIONS 24 in. X 24 in. Nom.
DEPTH 1.5 in. Nom.
MEDIA AREA $4\ Ft^2$
TYPE MEDIA MULTI-GRADUATED VARIABLE DENIER SYNTHETIC FIBERS
TYPE & AMOUNT ADHESIVE ______

BEST COPY AVAILABLE

DAVID J. MURPHY JR.
6035

| DATE | TEST SUPERVISOR | ENGINEERING APPROVAL |
|---|---|---|
| 5-20-1992 | J.P.S. | David J. Murphy |

# AIR FILTER TESTING LABORATORIES, INC.

4632 Old LaGrange Road • Crestwood, Kentucky 40014

AFTL

## AIR FILTER PERFORMANCE REPORT ASHRAE STANDARD 52.1-1992
## NON-SUPPORTED EXTENDED SURFACE TYPE AIR FILTERS

REPORT NO. 7365
TEST NO. 1
SHEET NO. 1

**DEVICE TESTED**

TEST REQUESTED BY TRI-DIM FILTER CORPORATION
MANUFACTURER TRI-DIM FILTER CORPORATION
PRODUCT NAME SYN-PAC POCKET FILTER
HOW LABORATORY PROCURED TEST SAMPLE PURCHASED FROM OPEN MARKET
MODEL NO. SP-95[illegible] DIMENSIONS 24 in. H 24 in W 30 in. D

| RATED PERFORMANCE DATA FROM MANUFACTURERS CATALOG NO. | | | DATED | |
|---|---|---|---|---|
| AIR FLOW CAPACITY | | | → | |
| INITIAL RESISTANCE | | | → | |
| FINAL RESISTANCE | | | | |
| INITIAL ATMOSPHERIC DUST SPOT EFFICIENCY | | | | |
| AVERAGE ATMOSPHERIC DUST SPOT EFFICIENCY | | | | |
| AVERAGE SYNTHETIC DUST WEIGHT ARRESTANCE | | | | |
| ASHRAE DUST HOLDING CAPACITY | | | | |

**TEST RESULTS**

| | | | | |
|---|---|---|---|---|
| TEST AIR FLOW RATE | 2000 | | → | CFM |
| INITIAL RESISTANCE | 0.46 | | → | in. W.G. |
| FINAL RESISTANCE | | | 1.50 | in. W.G. |
| INITIAL ATMOSPHERIC DUST SPOT EFFICIENCY | | | 90.6 | % |
| AVERAGE ATMOSPHERIC DUST SPOT EFFICIENCY | | | 97 | % |
| AVERAGE SYNTHETIC DUST WEIGHT ARRESTANCE | | | 100 | % |
| ASHRAE DUST HOLDING CAPACITY | | | 515 | Gm |

TEST SECTION DUCT SIZE 24.5 in. x 24.5 in. DUST FEEDING RATE 2.0 Gm/1000 CF

SEE BACK SIDE (PAGE 1A) FOR PERFORMANCE CURVES

**PHYSICAL DESCRIPTION**

NUMBER OF PLEATS 8 PLEAT DIMENSIONS 29.50 in. L x 25.50 in W
MEDIA AREA – GROSS 84 Ft² NET EFFECTIVE 81 Ft²
TYPE OF MEDIA NONWOVEN SYNTHETIC THICKNESS 0.25 in. FIBER DIAMETER –
TYPE OF ADHESIVE ON MEDIA NONE AMOUNT NONE
FACE PLATE CONSTRUCTION FORMED GALV. STL. CHANNEL FRAME
CONTAINS 8 NONWOVEN POCKET ASSEMBLIES
INLET OPEN AREA 3.1 Ft² AS A % OF 4.0 Ft² = 78 %
BACKER MATERIAL THICKNESS THIN NONWOVEN WEB
METHOD OF SECURING PLEATS – SIDES SEWN / SEALED
AIR ENTERING SIDE CRIMPED ASSEMBLY
TYPE OF FASTENER USED SEWN STITCH
NO. OF ROWS 8 NO. PER ROW 15
SEALING METHOD USED THERMOPLASTIC

DAVID L. MURPHY Jr. 6035

DATE 8-10-1993
TEST SUPERVISOR d.P.S.
ENGINEERING APPROVAL David L. Murphy Jr.

# Air Filter Application Guide

| Arrestance Ashrae 52.1 | Ashrae 52.1 Dust Spot Efficiency | Particle Size Efficiency (PSE) % | | | Min. Final Resistance (in w.g.) | Typical Controlled Contaminants | General Filter Type | General Application |
|---|---|---|---|---|---|---|---|---|
| | | Range 1 0.3-1.0 µm | Range 2 1.0-3 µm | Range 3 3.0-10.0 µm | | | | |
| <65% | <20% | N/A | N/A | E3<20 | 0.3 | Pollen, household dust | **Throwaway**–Disposable, fiberglass or synthetic panel filter, automatic roll filter media | Minimum Filtration–Residential |
| 65-70% | <20% | N/A | N/A | E3<20 | 0.3 | Dust mites, sanding dust | **Washable**–aluminum sprayed with adhesive coat, foam rubber panel filter | Minimum Filtration Residential |
| 70-75% | <20% | N/A | N/A | E3<20 | 0.3 | Paint Dust Textile fibers | **Electrostatic**–self-charging (passive) woven polycarbonate panel filter | Minimum Filtration Residential |
| 75-80% | <20% | N/A | N/A | E3<20 | 0.3 | Carpet Fibers | **Electronic Air Cleaner**–two stage high voltage with 1" to 3" depth collecting plates | Minimum Filtration Residential |
| 80-85% | <20% | N/A | N/A | 20<E3<35 | 0.6 | Snuff, Powdered Milk | **Throwaway**–disposable fiberglass or synthetic panel filters, ring panel filters, automatic roll filter media | Commercial Buildings<br>Residential<br>Industrial Workplaces<br>Paint Booth Inlet Air |
| 85-90% | <20% | N/A | N/A | 20<E3<50 | 0.6 | Dusting, cement dust | **Electronic Panel Filter**–Flat Panel Filters with Internal Charged Grid | Commercial Buildings<br>Residential<br>Industrial Workplaces<br>Paint Booth Inlet Air |
| >90% | <20% | N/A | N/A | 20<E3<70 | 0.6 | Hair Spray fabric protection | **Cartridge Filter**–graded density viscous coated cube or pocket filter synthetic media | Commercial Buildings<br>Residential<br>Industrial Workplaces<br>Paint Booth Inlet Air |
| >90% | 25-30% | N/A | N/A | 70<E3 | 0.6 | Mold spores | **Pleated Filter**–disposable extended surface 1" to 5" thick with cotton polyester blend media and cardboard frames | Commercial Buildings<br>Residential<br>Industrial Workplaces<br>Paint Booth Inlet Air |

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# Air Filter Application Guide

| restance hrae 52.1 | Ashrae 52.1 Dust Spot Efficiency | Particle Size Efficiency (PSE) % |  |  | Min. Final Resistance (in wg) | Typical Controlled Contaminants | General Filter Type | General Application |
|---|---|---|---|---|---|---|---|---|
|  |  | Range 1 0.3–1.0 µm | Range 2 1.0–3.0 µm | Range 3 3.0–10.0 µm |  |  |  |  |
| >90% | 40-45% | N/A | E2<50 | 85≤E3 | 1.0 | Nebulizer drops welding fumes | Electronic—two stage high voltage, typically 3000 to 65000 volts DC on 4" depth collector cells and 6000 to 8000 volts DC on ionizing wires | Residential |
| >95% | 50-55% | N/A | 50≤E2<65 | 85≤E3 | 1.0 | Coal dust, auto emission | Box Filters—rigid style cartridge filters 6" to 12" deep | Hospital Laboratories |
| >95% | 60-65% | N/A | 65≤E2<80 | 85≤E3 | 1.0 | Lead Dust, Milled flour | Bag Filters—non supportive media synthetic or glass, 12" to 36" deep, 3 to 12 pockets | Better Commercial Buildings |
| >95% | 70-75% | N/A | 80≤E2 | 90≤E3 | 1.0 | Legionella, humidifier dust | Box or Bag Filter—see above | Superior Residential Buildings |
| >95% | 80-90% | E1<75 | 90≤E2 | 90≤E3 | 1.4 | Copier toner, face powder | Box or Bag Filter—see above | Superior Commercial Buildings |
| >98% | 90-95% | 75≤E1<85 | 90≤E2 | 90≤E3 | 1.4 | Insecticide dust, most smoke | Box or Bag Filter—see above | Smoking Lounges |
| >98% | >95% | 85≤E1<95 | 90≤E2 | 90≤E3 | 1.4 | Droplet nuclei (sneezing) cooking oil | Box or Bag Filter—see above | General Surgery |
| — | N/A | 95≤E1 | 95≤E2 | 95≤E3 | 1.4 | All bacteria, most tobacco smoke | Box or Bag Filter—see above | Hospital Inpatient Care |
| N/A | N/A | ≥99.97% efficiency on 0.3 micron particles, IES Type A |  |  | 1.4 | Radon Progeny | Hepa Filter | Orthopedic Surgery |
| N/A | N/A | ≥99.99% efficiency on 0.3 micron particles, IES Type C |  |  | 1.4 | All combustion smoke | Hepa Filter | Carcinogenic Materials |
| N/A | N/A | ≥99.999% efficiency on 0.3 micron particles, IES Type D |  |  | 1.4 | Sea Salt | Hepa Filter | Pharmaceutical Manufacturing |
| N/A | N/A | ≥99.999%, efficiency on 0.1 to 0.2 micron particles, IES Type F |  |  | 1.4 | Carbon Dust Virus (unattached) | Hepa Filter | Radioactive Materials & Cleanrooms |

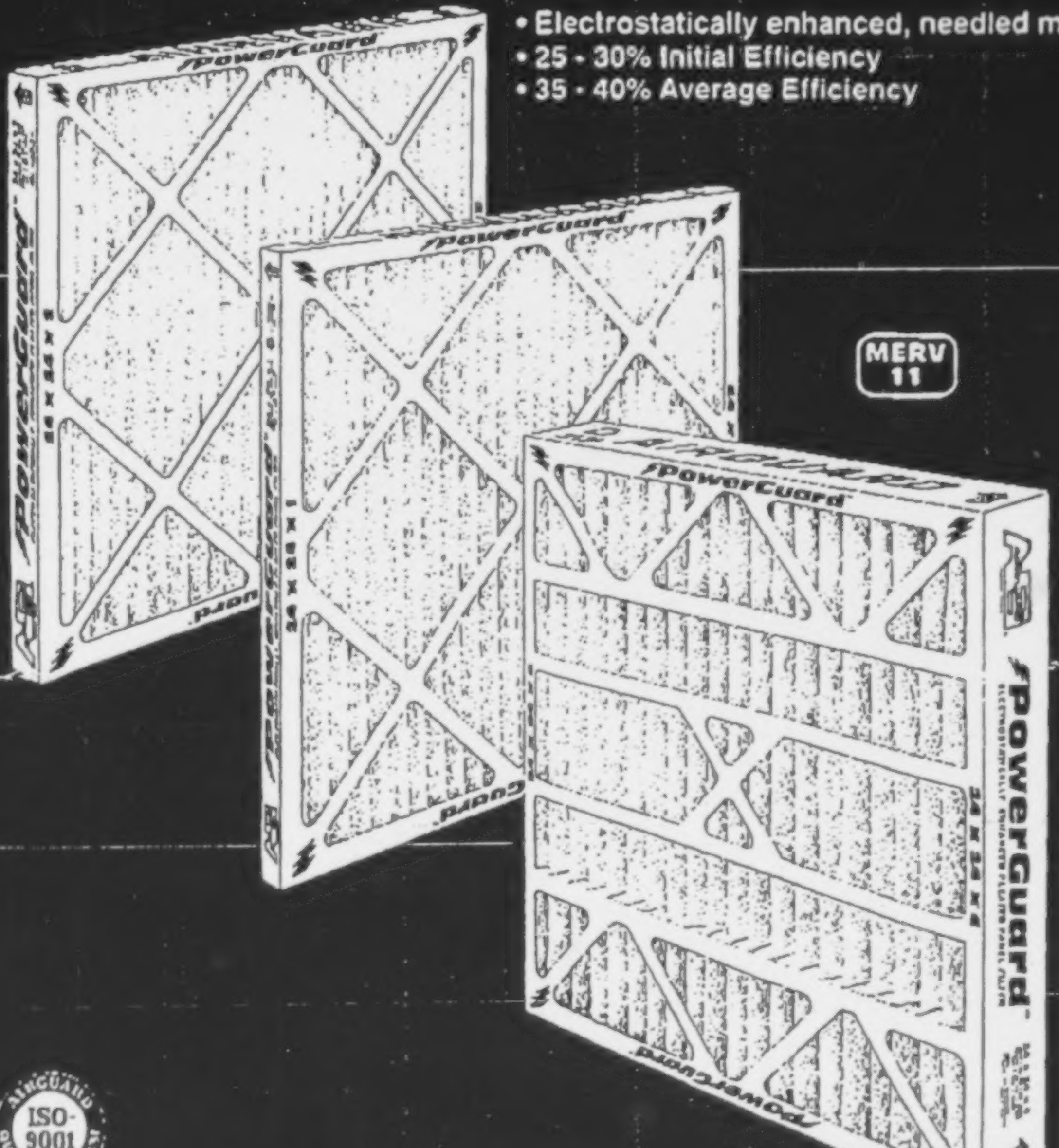
AIRGUARD®
a CLARCOR company

*Innovative
Clean Air
Solutions*

# PowerGuard™

## Supercharged Pleated Panel Filters

- Electrostatically enhanced, needled media
- 25 - 30% Initial Efficiency
- 35 - 40% Average Efficiency



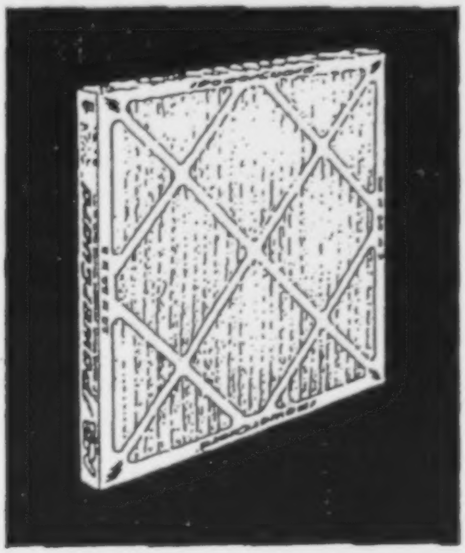
PowerGuard
24 x 24 x 2
AIRGUARD
PowerGuard
24 x 24 x 4

**MERV 11**

ISO-9001

# PowerGuard™
# Product Information

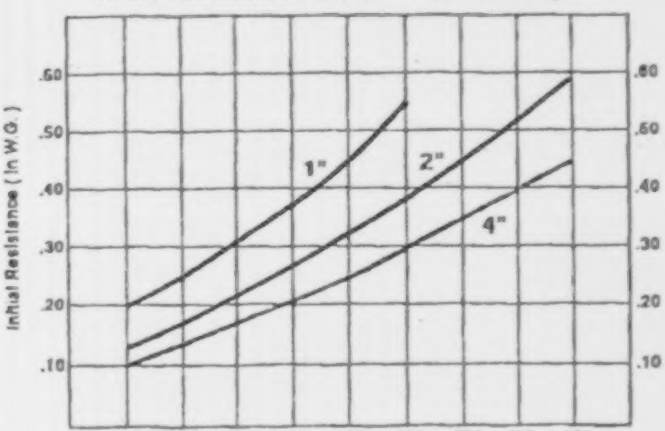
### 35 - 40% Efficiency, MERV-11



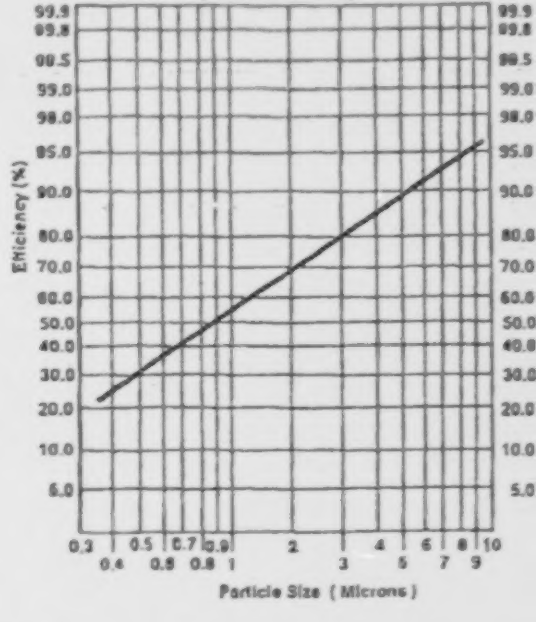
Performance data is based on the ASHRAE 52.1 and 52.2 Test Methods.
Performance tolerances conform to Section 7.4 of ARI Standard 850-93.
Recommended final resistance is 1.0" W.G.
Continuous Operating Temperature Limit: 200° F (93° C)
Underwriters Laboratories, Inc. Classification: PowerGuard filters are classified Class 2 per U.L. Standard 900.

| Nominal Size W x H x D | Actual Size W x H x D | Air Flow Capacity (CFM) | | | Initial Resistance (In. W.G.) | | | Cross Media Area (Sq. Ft.) |
|---|---|---|---|---|---|---|---|---|
| | | 300 FPM | 500 FPM | 625 FPM | 300 FPM | 500 FPM | 625 FPM | |
| 10 x 20 x 1 | 9-7/8 x 19-7/8 x 7/8 | 425 | 700 | N/R | .26 | .54 | N/R | 3.2 |
| 12 x 24 x 1 | 11-3/8 x 23-3/8 x 7/8 | 600 | 1000 | N/R | .26 | .54 | N/R | 4.2 |
| 14 x 20 x 1 | 13-7/8 x 19-7/8 x 7/8 | 590 | 980 | N/R | .26 | .54 | N/R | 4.3 |
| 14 x 25 x 1 | 13-7/8 x 24-7/8 x 7/8 | 730 | 1220 | N/R | .28 | .54 | N/R | 5.4 |
| 15 x 20 x 1 | 14-7/8 x 19-7/8 x 7/8 | 630 | 1050 | N/R | .26 | .54 | N/R | 4.6 |
| 16 x 20 x 1 | 15-1/2 x 19-1/2 x 7/8 | 670 | 1120 | N/R | .26 | .54 | N/R | 4.8 |
| 16 x 25 x 1 | 15-1/2 x 24-1/2 x 7/8 | 840 | 1400 | N/R | .28 | .54 | N/R | 6.0 |
| 18 x 24 x 1 | 17-7/8 x 23-7/8 x 7/8 | 900 | 1500 | N/R | .26 | .54 | N/R | 6.7 |
| 20 x 20 x 1 | 19-1/2 x 19-1/2 x 7/8 | 840 | 1400 | N/R | .26 | .54 | N/R | 6.2 |
| 20 x 25 x 1 | 19-1/2 x 24-1/2 x 7/8 | 1050 | 1750 | N/R | .26 | .54 | N/R | 7.7 |
| 24 x 24 x 1 | 23-3/8 x 23-3/8 x 7/8 | 1200 | 2000 | N/R | .26 | .54 | N/R | 9.6 |
| 12 x 20 x 2 | 11-3/4 x 19-3/4 x 1-3/4 | 500 | 840 | 1050 | .17 | .38 | .55 | 7.3 |
| 12 x 24 x 2 | 11-3/8 x 23-3/8 x 1-3/4 | 600 | 1000 | 1250 | .17 | .38 | .55 | 8.6 |
| 14 x 20 x 2 | 13-3/4 x 19-3/4 x 1-3/4 | 590 | 980 | 1220 | .17 | .38 | .55 | 8.8 |
| 14 x 25 x 2 | 13-3/4 x 24-3/4 x 1-3/4 | 730 | 1220 | 1525 | .17 | .38 | .55 | 11.0 |
| 14-1/2 x 26-3/4 x 2 | 14-1/2 x 26-3/4 x 1-3/4 | 810 | 1350 | 1680 | .17 | .38 | .55 | 12.1 |
| 15 x 20 x 2 | 14-3/4 x 19-3/4 x 1-3/4 | 630 | 1050 | 1310 | .17 | .38 | .55 | 8.3 |
| 16 x 20 x 2 | 15-1/2 x 19-1/2 x 1-3/4 | 670 | 1120 | 1400 | .17 | .38 | .55 | 10.1 |
| 16 x 24 x 2 | 15-1/2 x 23-1/2 x 1-3/4 | 800 | 1340 | 1670 | .17 | .38 | .55 | 11.8 |
| 16 x 25 x 2 | 15-1/2 x 24-1/2 x 1-3/4 | 840 | 1400 | 1750 | .17 | .38 | .55 | 12.3 |
| 18 x 20 x 2 | 17-3/4 x 19-3/4 x 1-3/4 | 750 | 1250 | 1570 | .17 | .38 | .55 | 10.6 |
| 18 x 24 x 2 | 17-1/2 x 23-1/2 x 1-3/4 | 900 | 1500 | 1875 | .17 | .38 | .55 | 13.0 |
| 18 x 25 x 2 | 17-3/4 x 24-3/4 x 1-3/4 | 940 | 1570 | 1960 | .17 | .38 | .55 | 13.8 |
| 20 x 20 x 2 | 19-1/2 x 19-1/2 x 1-3/4 | 840 | 1400 | 1750 | .17 | .38 | .55 | 11.9 |
| 20 x 24 x 2 | 19-3/8 x 23-3/8 x 1-3/4 | 1000 | 1670 | 2090 | .17 | .38 | .55 | 14.2 |
| 20 x 25 x 2 | 19-1/2 x 24-1/2 x 1-3/4 | 1050 | 1750 | 2170 | .17 | .38 | .55 | 14.9 |
| 24 x 24 x 2 | 23-3/8 x 23-3/8 x 1-3/4 | 1200 | 2000 | 2500 | .17 | .38 | .55 | 17.0 |
| 25 x 25 x 2 | 24-3/4 x 24-3/4 x 1-3/4 | 1310 | 2170 | 2720 | .17 | .38 | .55 | 18.2 |
| 12 x 24 x 4 | 11-3/8 x 23-3/8 x 3-3/4 | 600 | 1000 | 1250 | .13 | .30 | .44 | 12.4 |
| 14-1/2 x 26-3/4 x 4 | 14-1/2 x 26-3/4 x 3-3/4 | 810 | 1350 | 1680 | .13 | .30 | .44 | 20.8 |
| 16 x 20 x 4 | 15-1/2 x 19-1/2 x 3-3/4 | 670 | 1120 | 1400 | .13 | .30 | .44 | 14.8 |
| 16 x 25 x 4 | 15-1/2 x 24-1/2 x 3-3/4 | 840 | 1400 | 1750 | .13 | .30 | .44 | 18.3 |
| 18 x 24 x 4 | 17-1/2 x 23-1/2 x 3-3/4 | 900 | 1500 | 1875 | .13 | .30 | .44 | 18.9 |
| 20 x 20 x 4 | 19-1/2 x 19-1/2 x 3-3/4 | 840 | 1400 | 1750 | .13 | .30 | .44 | 18.8 |
| 20 x 24 x 4 | 19-3/8 x 23-3/8 x 3-3/4 | 1000 | 1670 | 2090 | .13 | .30 | .44 | 22.4 |
| 20 x 25 x 4 | 19-1/2 x 24-1/2 x 3-3/4 | 1050 | 1750 | 2170 | .13 | .30 | .44 | 23.5 |
| 24 x 24 x 4 | 23-3/8 x 23-3/8 x 3-3/4 | 1200 | 2000 | 2500 | .13 | .30 | .44 | 26.1 |
| 24-1/2 x 28-1/2 x 4 | 24-1/2 x 28-1/2 x 3-3/4 | 1480 | 2430 | 3030 | .13 | .30 | .44 | 32.6 |

## Initial Resistance vs. Filter Face Velocity



## Efficiency by Particle Size (Clean)
## (ASHRAE 52.2)



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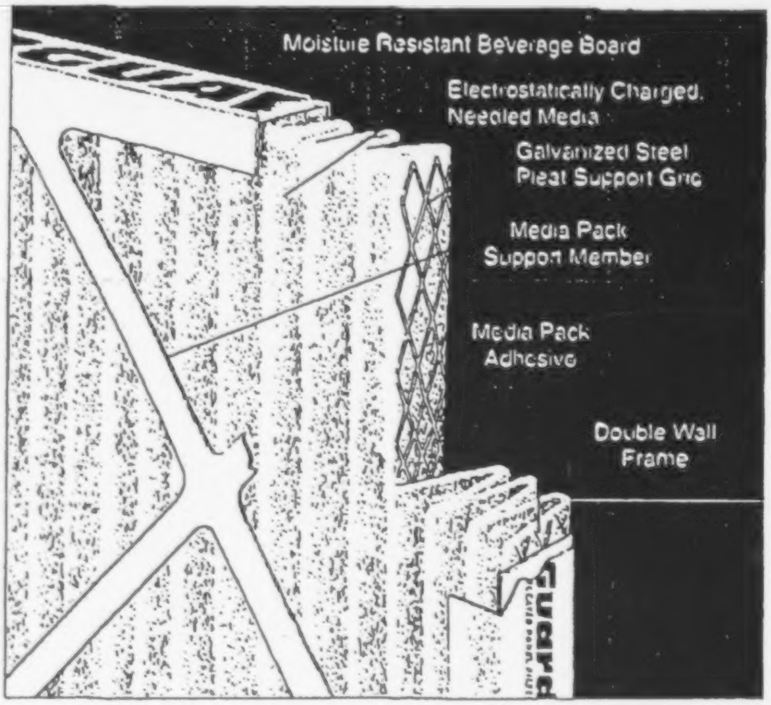
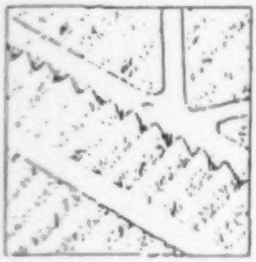
## Consistent Pleat Alignment and Rigid Construction Assure Dependable Operation

### Uniform Pleat Shape Enhances Dust Holding Capacity

PowerGuard pleats are formed by an expanded metal grid made of rust resistant galvanized steel laminated to the air leaving side of the supercharged media. The metal grid maintains pleat shape and prevents fluttering. Pleat stability in operation prevents dirt particles from shaking loose and blowing down stream. Consistent pleat shape also assures maximum air flow with minimum resistance and high dirt loading characteristics throughout the life of the filter.


Moisture Resistant Beverage Board
Electrostatically Charged, Needled Media
Galvanized Steel Pleat Support Grid
Media Pack Support Member
Media Pack Adhesive
Double Wall Frame

**Pleat Stabilizers** The 4" deep filters are equipped with individual die cut fingers that separate and stabilize each pleat. Consistent pleat alignment enhances dust holding capacity for longer service life.



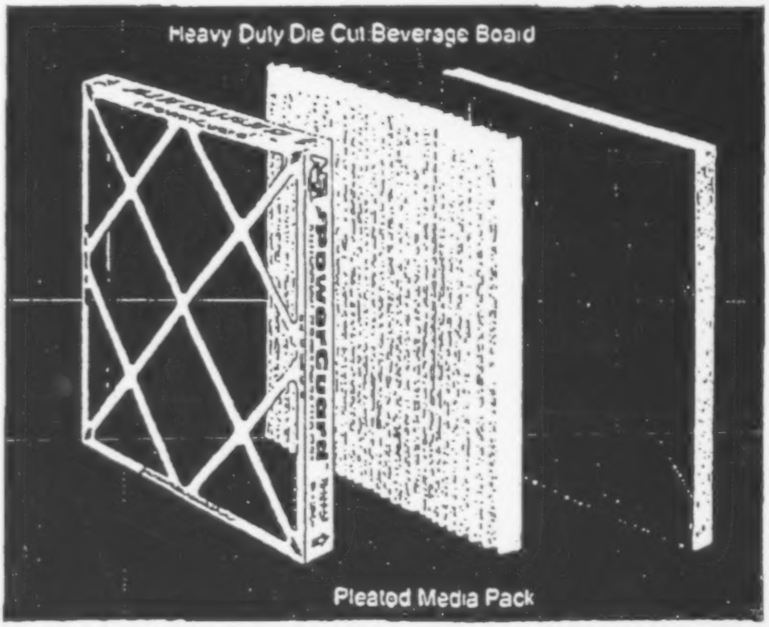
### Bonded Media Pack Prevents Bypass

The PowerGuard frame is made from two mating pieces of die cut beverage board that form a double wall around the entire perimeter of the filter. The entire inside surface of both pieces of the frame are coated with adhesive to bond with the media pack at all points of contact. This forms a totally unitized construction and prevents bypass.

The PowerGuard filters are unusually strong and rigid and will not rack, warp or bend under normal handling or operating conditions. Media pack support members on both sides of the filter add rigidity and help hold pleat shape as the dirt load builds and resistance rises. These cross members are an integral part of the die cut frame construction.

### Side Access Model

For side access systems requiring a header style filter, PowerGuard SA filters are available.


Heavy Duty Die Cut Beverage Board
PowerGuard
Pleated Media Pack

*Two mating pieces of die cut beverage board form a double wall frame around all four edges of the filter. PowerGuard filters will not rack or warp under normal operating conditions.*

# PowerGuard™

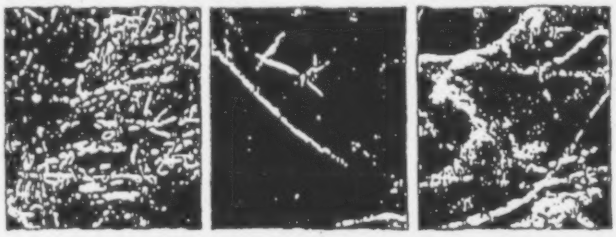
## Supercharged Pleated Panel Filters

**MERV 11**

### Unique New Media Design Provides Higher Efficiency on Fine Particulate

Only PowerGuard filters are made with a totally new concept in media design consisting of 100% synthetic fibers that are needled, then electrostatically charged. The combined effect of these two processes sets a new standard in pleated filter performance - 25 - 30% initial efficiency with 70% minimum efficiency on 1 - 3 micron particles. PowerGuard filters are ideally suited for applications requiring higher efficiency on fine particulate compared to standard pleated filters.

**Needled Fibers** - The needling process thoroughly entangles the fibers throughout the entire depth of the media creating a dense mat that produces higher mechanical efficiency. The intertwined fibers maximize mechanical efficiency at lower resistance than other pleated filters designed for higher MERV Values. Depth loading provides high dust holding capacity.



**PowerGuard Media** | **Other Synthetic Media** | **Cotton/Poly Media**

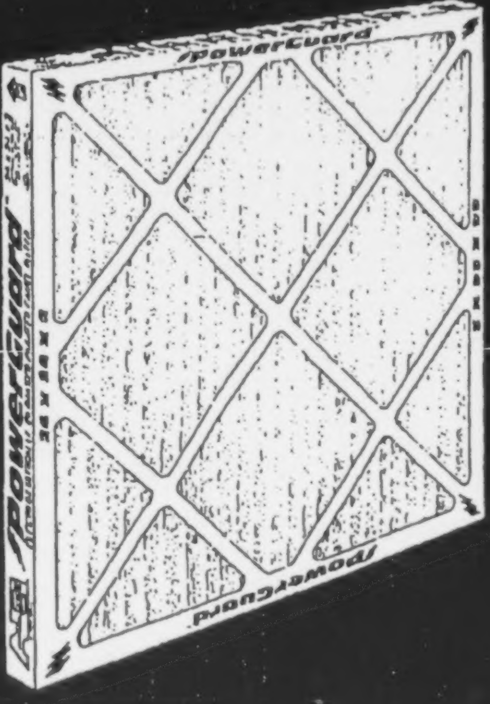
*See how the entangled, crinkled fibers of the needled PowerGuard media (left) enhances the filter's ability to capture particulate. Competitive synthetic media (center) and cotton/poly media (right) have a more linear dimension with less ability to grab airborne dirt particles*

**Electrostatically Charged** - After the media has been needled it is exposed to an extremely high voltage which supercharges the fibers throughout the entire depth of the media. The charged fibers attract fine particulate like dust on a TV screen.

### Electrostatic Charge Enhances Efficiency on Fine Particulate - MERV-11

To qualify for a MERV-11 Value per ASHRAE Standard 52.2, the filter must achieve between 65% and 80% efficiency on 1 - 3 micron particles and greater than 85% on 3 - 10 micron particles. PowerGuard filters exceed these values; other filters fall short. The reason PowerGuard filters excel in efficiency on fine particulate is the unique media design - 100% synthetic fibers, needled, then supercharged.

ASHRAE initial and average dust spot efficiencies are also excellent.



**Minimum Efficiency Test Results**
**ASHRAE Standard 52.2**

| Particle Size (Microns) | Minimum Efficiency (Clean Filter @ 500 FPM) | Particle Size (Microns) | Minimum Efficiency (Clean Filter @ 500 FPM) |
|---|---|---|---|
| 0.30 - 0.40 | 22.4% | 1.60 - 2.20 | 73.0% |
| 0.40 - 0.55 | 26.0% | 2.20 - 3.00 | 80.2% |
| 0.55 - 0.70 | 40.1% | 3.00 - 4.00 | 85.4% |
| 0.70 - 1.00 | 51.9% | 4.00 - 5.50 | 87.4% |
| 1.00 - 1.30 | 58.7% | 5.50 - 7.00 | 90.7% |
| 1.30 - 1.60 | 66.2% | 7.00 - 10.0 | 96.3% |

**Dust Spot Efficiency**
**ASHRAE Standard 52.1**

|  | 1" (@ 300 FPM) | 2" (@ 500 FPM) | 4" (@ 500 FPM) |
|---|---|---|---|
| Initial Efficiency | 21% | 29% | 30% |
| Average Efficiency | 34% | 35% | 40% |

**Air Marketing Group LLC**

**141 Kinderkamack Road**
**Park Ridge, NJ 07656**
**Phone: 201-782-1782**
**Fax:201-782-1783**

# PROPOSAL

| DATE | ESTIMATE NO. |
|---|---|
| 1/22/2002 | 22-1515 |

## PREPARED FOR:

Burns & Roe
Robert Cascone
800 Kinderkamack Rd
Oradell, NJ 07649

AMG
Air Marketing Group LLC

| P.O. NO. | TERMS | PROJECT |
|---|---|---|
| | | Particle Meter |

| ITEM | DESCRIPTION | QTY | RATE | TOTAL |
|---|---|---|---|---|
| IQAir Particle Sca... | IQAir Particle Scan Pro Kit 201 12 01 01 with software. | 1 | 3,000.00 | 3,000.00 |
| | Sales Tax is Not included | | 0.00 | 0.00 |

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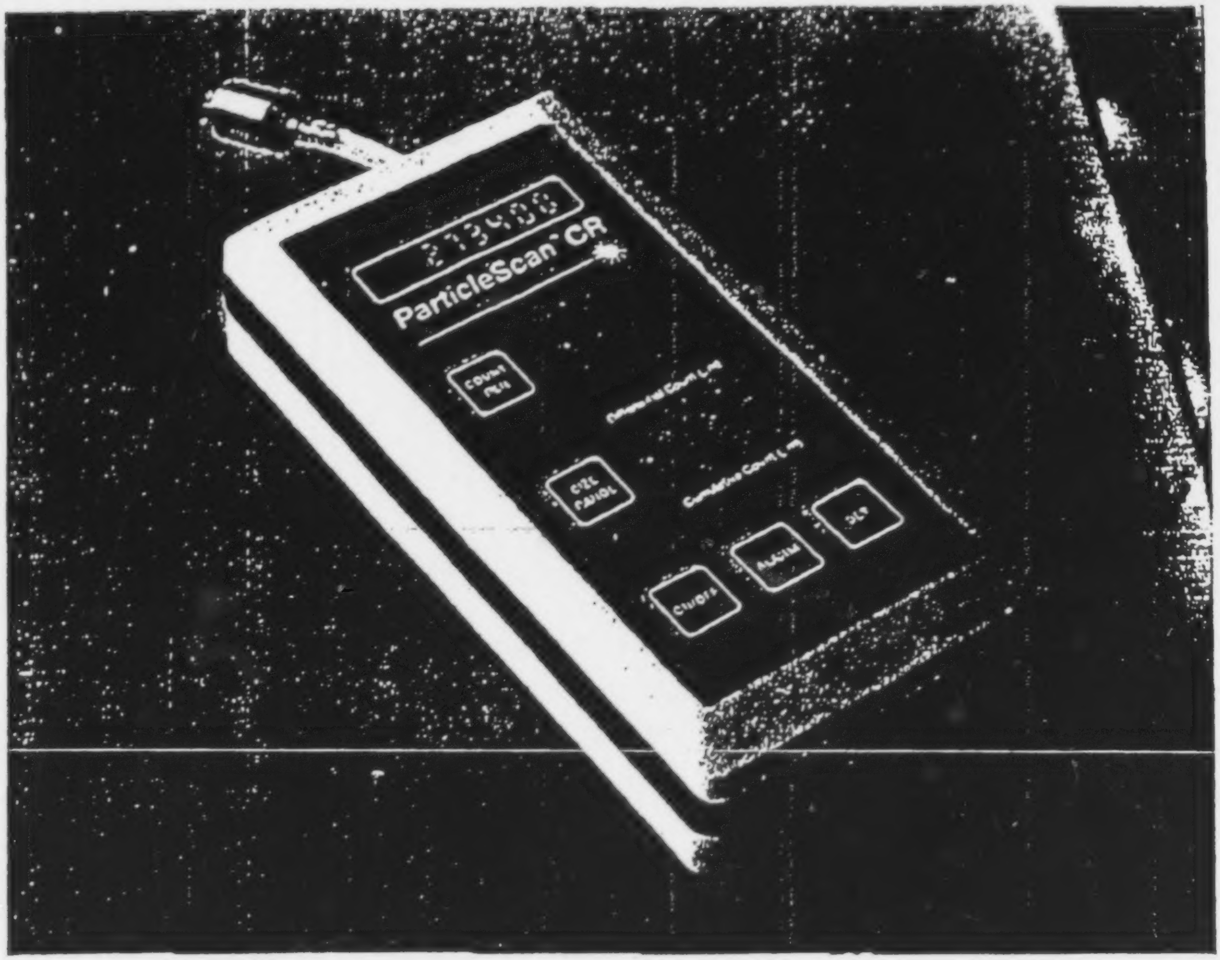
| | |
|---|---|
| Freight & Sales Tax are not included in this proposal.. | **TOTAL** $3,000.00 |

Our quotation & any order resulting therefrom, is subject to the following terms & conditions: 1. Prices herein quoted are firm for thirty (30) days only from the date of quotation unless otherwise noted. 2. If an order results from this quotation, price on the order is firm for 60 days from the date of the order or for that period of time as is negotiated at the time of placement of the order, providing that the manufacturer of the equipment guarantees this price. 3. If no manufacturer's guarantee on price is forthcoming then price is subject to increase by that manufacturer at time of order & or shipment. 4. Above quotation is made in accordance with our interpretation of plans & specifications & on equipment subject to approval by Architect & Engineer. We quote only on quantities & items listed above. Responsibility for checking job quantities & item description against those quoted remains with the customer. 5. All past due amounts are subject to a 2% per month finance charge.



# ParticleScan™ CR

## Six-Channel Laser Particle Counter to Monitor and Verify Cleanrooms

- 0.3 micron sensitivity at 0.1 cfm (2.83 lpm) flow rate
- 6 size channels: 0.3, 0.5, 0.7, 1.0, 3.0, 5.0 microns
- Gives updated particle concentration readings every six seconds
- Battery or AC operated
- Compact, hand-held design with bright LED display
- Data logging via RS-232 software connection kit (optional)

# ParticleScan™ CR:
# dvanced Particle Counting Made Easy

cleScan™ CR is an advanced, easy to use particle counter developed for cleanroom use. witch the unit on and select the size channel of interest. The instrument takes a six second then calculates and displays the particle concentration for the selected size range ative or differential). There are no complicated sub-menus, no long manuals to refer to. Used elf the ParticleScan™ CR allows to quickly verify cleanrooms, test filters for leakage or track particle sources.

### a Logging

th the optional software kit and an IBM compatible computer the ParticleScan™ CR can be used r continuous data logging - in six different size ranges simultaneously. The software kit transforms ne ParticleScan™ CR into a powerful analysis and reporting tool that plots particle contamination trends and size distribution in easy to read graphs.

### Alarm Function

The ParticleScan™ CR also incorporates an alarm function. When a set particle concentrations is exceeded, the instrument will sound an audible alarm or set off a computer alarm to allow for remedial action.

## Specifications

- **Minimum sensitivity:** 0.3 µm (counting efficiency: 50% at 0.3 µm, 100% at 0.45 µm)
- **Flow rate:** 0.1 cfm (2.83 litres per minute)
- **Coincidence loss:** less than 5% at 2,000,000 particles per cubic foot
- **Size channels (µm):** 0.3, 0.5, 0.7, 1.0, 3.0, 5.0 µm
- **Sample time:** 6 seconds, continuous with no delay time
- **Count displayed as:** particles per cu. ft., particles per 0.01 cu. ft. or particles per litre
- **Display:** 8-digit LED
- **Laser source:** Laser diode, 680 nm
- **Audible alarm range:** 1 - 99'999'999 particles per channel
- **Power:** AC adapter, 230V, 50Hz or 115V, 60Hz
- **Batteries:** 2 x 9V rechargeable included, 2 hours continuous operation
- **Dimensions & weight:** 7.75 x 4.0 x 2.25 inches (19.5 x 10.0 x 5.5 cm), 1.2 lbs (0.55 kg)
- **Supplied accessories:** carrying case, zero filter, isokinetic probe, AC adapter, calib. certif.
- **Warranty:** 1 year on parts and labour
- **Computer Interface:** RS 232
- **Data acquisition:** optional software allows for data logging into Excel spreadsheet and on-line real-time data monitoring & graph display
- **System requirements:** IBM compatible with Windows 3.0/95/97/98/NT
  CD capability, available 9 pin or 25 pin COM port
  Excel 97 for Windows or later version

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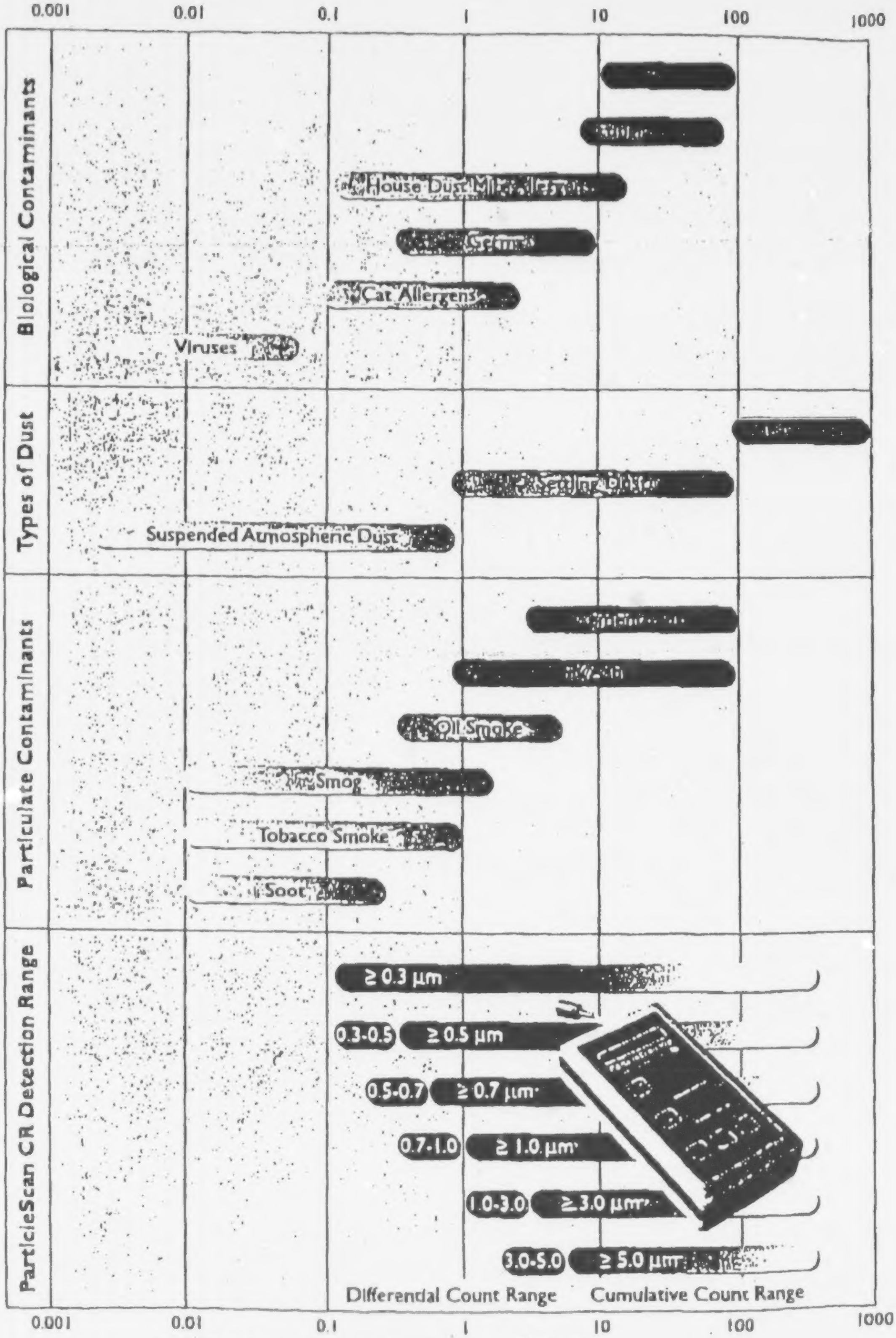
# ParticleScan™ CR: Detection Range and Size Channels



[illegible]

**Burns and Roe Enterprises, Inc.**
*800 Kinderkamack Road, Oradell, New Jersey 07649*
*NJ (201) 265-2000 NY (212)563-7700*

February 6, 2002

2002 FEB 12 AM 9:44

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 – HVAC Filtration

Mr. Harvey Jacobs
NYC Board of Education - Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Jacobs:

As Ms. DaCosta requested, following is an outline of the work performed for our payment requisition #3 in the amount of $32,593.97. Requisition 3 includes labor charges from week end December 14 to week end January 11, 2002, and expenses through December 2001.

Burns and Roe provided technical HVAC engineering assistance to the Board of Education's Division of School Facilities, assisting in installation of additional filtration for "ground zero" schools. [redacted]endations for Stuyvesant High School, [redacted] including:

- Visiting the school buildings to review existing designs and installations to determine methods, equipment and systems to improve operations and performance.
- Surveying the buildings HVAC system, machinery and controls.
- Analysis of feasibility and engineering issues.
- Development of specifications and Scope of work documents.
- Providing construction support including monitoring the JOC contractors work, inspect quality of work, follow up with contractors for compliance.
- Advising the Board of Education with regard to HVAC equipment.
- Attending Parents Association (PA) and facility committee meetings.

Should you have any questions or require additional information, please call me at (201) 986-4094.

Very truly yours,

Bill Urban, P.E.
Project Manager

cc: Mr. Charles Collins
Ms. Ruby DaCosta

**H. A. Bader Consultants, Inc.**
Environmental Consulting Engineers
88 Bleecker Street, Suite 4E
New York, New York 10012

oward A. Bader, P.E.
esident

TEL: 212-475-41
FAX: 212-477-89

February 7, 2002

Stuyvesant High School Parents' Association
345 Chambers Street
New York, New York 10282-1099

Dear Parents:

This morning I received a report from ATC Associates for lead wipe surface testing at Stuyvesant High School. The testing was performed on February 6, 2002. The U.S. Federal Department of Housing and Urban Development (HUD) and the City of New York Department of Health (DOH) have established allowable levels of lead dust in settings occupied by children. The HUD/DOH clearance level is 40 micrograms per square foot (:g/ft2) for floor surfaces and 250 :g/ft2 for window sills.

On February 6, 2002, elevated lead concentrations were detected on floor surfaces in the 5th Floor Hall (312 :g/ft2) and in Classroom 635 (204.8 :g/ft2). Exposure to excessive levels of lead dust can cause brain, nervous system, and organ damage.

Lead testing was only performed in 3 classrooms and lead was detected in all 3 areas. The other classrooms were Rooms 701 and 838. These 3 classrooms are intended to be representative of all classrooms in the school (one per exposure, north, east and south). The lead concentrations detected in Classrooms 701 (floor 19.8, sill 53) and 838 (floor 19.9, sill 100.6 :g/ft2) were significant, however levels were less than the HUD/DOH clearance levels.

Based on the date of construction, it is believed that there is no internal source of lead in the building. The entire building (except the ventilation air distribution systems) were thoroughly cleaned prior to re-occupancy on October 9, 2001. Lead contamination attributed to World Trade Center collapse and cleanup has been identified outdoors in lower Manhattan.

While elevated lead concentrations on floor surfaces can often be attributed to tracking (i.e., dust on shoes) from outdoors, lead contamination on window sills is an indication that airborne lead contaminated dust is entering the building. The primary pathways for dust to enter the classrooms are the windows and the classroom HVAC unit ventilators. Since opening windows in the building is not allowed, the unit ventilators are the primary focus. Testing by the Board of

Education at Stuyvesant High School since October has demonstrated that the unit ventilator filtration system does not effectively remove airborne particulates.

ATC Associates submitted two wipe blank samples for laboratory analysis as part of the lead testing on February 6, 2002. The blanks had lead concentrations of 34.2 and 54.7 :g/ft2. Blank samples should be non-detected or have extremely low lead concentration. The lead concentrations in the blank samples indicates a **serious flaw** in the test procedure. To insure reliability, the BOE must perform a thorough quality control investigation of all environmental testing procedures conducted at Stuyvesant High School.

H. A. Bader Consultants recommends immediate retesting for lead concentrations throughout the building. Additional classrooms should be tested (minimum 20%) to determine the extent of lead contamination in these areas. If you have any questions, please call.

Sincerely,

Howard A. Bader, P.E.
President

**Burns and Roe Enterprises, Inc.**
*800 Kinderkamack Road, Oradell, New Jersey 07649*
*NJ (201) 265-2000 NY (212)563-7700*

February 8, 2002

2002 FEB 13 PM 3:22

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 – HVAC Filtration

Mr. Harvey Jacobs
NYC Board of Education - Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Jacobs:

As backup to our previous correspondence, I have attached the contractors capital cost proposal for the actual work performed at the various schools.

| School | Contractors Proposal |
|---|---|
| [redacted] | [redacted] |
| Stuyvesant HS | $660,199.90 |
| [redacted] | [redacted] |
| [redacted] | [redacted] |
| [redacted] | [redacted] |
| [redacted] | [redacted] |
| [redacted] | [redacted] |

Should you have any questions or require additional information, please call me at (201) 986-4094.

Very truly yours,

Bill Urban, P.E.
Project Manager

cc: Mr. Charles Collins
Ms. Ruby DaCosta

**Burns and Roe Enterprises, Inc.**
*800 Kinderkamack Road, Oradell, New Jersey 07649*
*NJ (201) 265-2000 NY (212)563-7700*

2002 FEB 13 PM 3:22

February 8, 2002

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 – HVAC Filtration

Mr. Charles Collins, NYC BOE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

Enclosed is an additional copy of Requisition 2 as you requested. This requisition includes charges associated with technical HVAC engineering assistance to the Board of Education's Division of School Facilities, assisting in installation of additional filtration for "ground zero" schools. Specifically, the work involved analysis and recommendations for Stuyvesant High School, [redacted] including:

- Visiting the school buildings to review existing designs and installations to determine methods, equipment and systems to improve operations and performance.
- Surveying the buildings HVAC system, machinery and controls.
- Analysis of feasibility and engineering issues.
- Development of specifications and Scope of work documents.
- Providing construction support including monitoring the JOC contractors work, inspect quality of work, follow up with contractors for compliance.
- Advising the Board of Education with regard to HVAC equipment.
- Attending Parents Association (PA) and facility committee meetings.

Should you have any questions or require additional information, please call me at (201) 986-4094.

Very truly yours,

Bill Urban, P.E.
Project Manager

cc: Ms. Ruby DaCosta (w/att.)

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**Burns and Roe Enterprises, Inc.**
*800 Kinderkamack Road, Oradell, New Jersey 07649*
*NJ (201) 265-2000 NY (212)563-7700*

February 8, 2002

ARCHITECTURE & ENGINEERING
2002 FEB 13 PM 3:22

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 – HVAC Filtration

Mr. Harvey Jacobs
NYC Board of Education - Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Jacobs:

We have broken down the last two requisitions by school as you requested. Since we have not tracked our effort by school to date, we have broken down our effort by approximate capital cost of the program through January 31,2001 as an indication of our effort. The following table illustrates the breakdown.

| School | | Requisition 2 | Requisition 3 | Total |
|---|---|---|---|---|
| [redacted] | | | | [redacted] |
| Stuyvesant HS | 40% | $6,390.09 | $13,037.59 | $19,427.68 |
| [redacted] | [redacted] | [redacted] | [redacted] | [redacted] |

Should you have any questions or require additional information, please call me at (201) 986-4094.

Very truly yours,

Bill Urban, P.E.
Project Manager

cc: Mr. Charles Collins
Ms. Ruby DaCosta

\\BRORD1\VOL1\HOME\URBANW\DATA\FILES\BOE Consultant - Bronx\Memo22.Doc

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*Achievements in engineering and construction since 1932*

**Burns and Roe Enterprises, Inc.**
*800 Kinderkamack Road, Oradell, New Jersey 07649*
*NJ (201) 265-2000 NY (212)563-7700*

February 12, 2002

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 – HVAC Filtration

Mr. Charles Collins, NYC BOE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

As requested we have sent a copy of the mechanical drawings we collected during our site visit to Stuyvesant High School to:

2002 FEB 20 AM 9 59

Mr. Alex Lampert
2nd Floor – IEH Department
School Construction Authority
30-30 Thomson Ave.
Long Island City, NY 11101-3045

Should you have any questions or require additional information, please call.

Very truly yours,

Bill Urban, P.E.
Project Manager

Cc: Mr Steve Lampert, SCA.

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[redacted]

**Burns and Roe Enterprises, Inc.**
*800 Kinderkamack Road, Oradell, New Jersey 07649*
*NJ (201) 265-2000 NY (212)563-7700*

Cm Collins 2/2

February 13, 2002

2002 FEB 15 PM 1:28

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 – HVAC Filtration

Mr. Charles Collins, NYC BOE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

Attached is payment Requisition #4 for $27,302.65 ($25,677.36 Labor and $1,625.29 Reimbursable). This requisition includes charges associated with the additional; filtration for "ground zero" schools. Expenses through February 1, 2002 have been included.

Similar to Requisition 2 and 3, Requisition 4 is for technical HVAC engineering assistance to the Board of Education's Division of School Facilities, assisting in installation of additional filtration for "ground zero" schoo[illegible] [redacted]endations for Stuyvesant High School [illegible] Trinity [illegible]including:

- Visiting the school buildings to review existing designs and installations to determine methods, equipment and systems to improve operations and performance.
- Surveying the buildings HVAC system, machinery and controls.
- Analysis of feasibility and engineering issues.
- Development of specifications and Scope of work documents.
- Providing construction support including monitoring the JOC contractors work, inspect quality of work, follow up with contractors for compliance.
- Advising the Board of Education with regard to HVAC equipment.
- Attending Parents Association (PA) and facility committee meetings.

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Likewise, we have broken down our effort by the approximate capital cost of the program by school through January 31,2001 as an indication of our effort. The following table illustrates the breakdown.

| School | | Requisition 4 |
|---|---|---|
| Stuyvesant HS | 40% | $10,921.06 |
| [redacted] | | |

Should you have any questions or require additional information, please call.

Very truly yours,

Bill Urban, P.E.
Project Manager

cc: Ms Ruby DaCosta (NYCBOE) w/att
Mr. Harvey Jacobs (NYCBOE) w/att

OK for payment
CMCollins
2/21/02

BURNS AND ROE ENTERPRISES, INC.
800 KINDERKAMACK ROAD
ORADELL, NEW JERSEY 07649

NYC - BOARD OF EDUCATION
28-11 QUEENS PLAZA NORTH
LIC, NY 11101

CUSTOMER NO. : 111500

INVOICE NO. : I16928

INVOICE DATE : FEBRUARY 13, 2002

PROJECT NO. : 02469002

REF. NO.: PO 3480219, RFP 10-01

PROJECT MGR. : URBAN, WILLIAM J.

| DESCRIPTION | TOTAL AMOUNT |
|---|---|
| PROJECT: 02469002 STYVESANT HS AIR QUALITY & FILTRATION | |
| TO INVOICE REQUISITION NO.4 | $27,302.65 |
| SUBTOTAL - COST | $27,302.65 |
| **TOTAL THIS INVOICE** | $27,302.65 |

*** TOTAL GROSS COST:

| | |
|---|---|
| CURRENT COST: | $27,302.65 |
| PREVIOUSLY INVOICED: | 48,569.20 |
| CUMULATIVE COST: | $75,871.85 |

*** TOTAL RETENTION:

| | |
|---|---|
| CUMULATIVE COST: | $.00 |

*** TOTAL NET COST:

| | |
|---|---|
| CURRENT COST: | $27,302.65 |
| PREVIOUSLY INVOICED: | 48,569.20 |
| CUMULATIVE COST: | $75,871.85 |

PLEASE REMIT TO: BURNS AND ROE ENTERPRISES, INC.
P.O. BOX 198842, ATLANTA, GA 30384-8842

INVOICE PREPARED BY MECKY MARTINO 201-986-4661 C1

TO:
2/27/02

① B. ORLAN - [redacted]

② J. LONERGAN

③ JPN - RTN

**BOARD OF EDUCATION**
OF THE CITY OF NEW YORK
110 LIVINGSTON STREET
BROOKLYN, N.Y. 11201

NG HAMER, JR.
MEMBER

February 28, 2002

Mr. Harold O. Levy
Chancellor
New York City Board of Education
110 Livingston Street, Room 10
Brooklyn, NY 11201

Dear Chancellor Levy:

Re: Cleaning of the Ventilation Ducts at Stuyvesant High School

I am requesting that the ventilation ducts at Stuyvesant High School be cleaned. This request is the result of numerous discussions with BOE staff, parents, health experts, doctors, federal, state and city officials. My background work has been exhaustive and instructive to my reasoning for this request.

Firstly, cleaning the ducts should be considered a preventive measure. We should not assume the ducts are clean. Nor should we presume that there are no particulates that might not become airborne at a later date. Cleaning the ducts will give us confidence that we have taken a preventive measure.

Secondly, the steps we have already taken are undermined by our not taking the fundamental steps of thoroughly cleaning the air conductors. I am mindful that there have been negative spikes in the air quality and no one is able to conclusively explain them. Cleaning the ducts will eliminate the air conductors as a culprit.

Lastly, the partial cleaning of the ducts is recognition of the potential that the conductors might be harboring particulates. Such recognition leads me to conclude that a thorough cleaning is necessary.

It is my proposal that the cleaning be done in March during the spring break. My expectation is that you will glean the merit of this request and proceed accordingly.

Respectfully,

cc: Members, Board of Education
C. Virginia Fields, Manhattan Borough President
Alan J. Gerson, Member, New York City Council
Tony Shorris, Deputy Chancellor for Management
David Klasfeld, Deputy Chancellor for Operations
Rose Depinto, High School Superintendent
Tony Sawyer, Manhattan Superintendent for High School
Joe Nappi, Division of School Facilities
Stanley Teitel, Principal, Stuyvesant High School
Members, Stuyvesant High School Parents' Association

**BOARD OF EDUCA ON OF THE CITY OF NEW YORK**
HAROLD O. LEVY, *Chancellor*

OFFICE OF THE CHANCELLOR
110 LIVINGSTON STREET, BROOKLYN NY 11201

Charles M. Collins, Director
Architecture & Engineering
Telephone (718) 391-6920
Facsimile (718) 391-6909

February 28, 2002

S. Matthew Talley, Management Consulting Services
PricewaterhouseCoopers LLP
1616 North Fort Meyer Drive
Arlington VA 22209-3100

Re: New York City Board of Education (BOE)
FEMA Reimbursement - Ground Zero Schools

Dear Mr. Talley:

This is to confirm our recent conversation concerning reimbursement by the Federal Emergency Management Agency (FEMA) for services performed by our contractor and consultant in connection with the work required to rehabilitate the Heating, Ventilating and Air Conditioning (HVAC) systems at six NYC Board of Education school buildings. The schools, PS /IS 89, PS 150, PS 234, Stuyvesant High School, the High School for Leadership and the High School of Economics and Finance are all in close proximity to Ground Zero and were affected by the terrorist attacks on the World Trade Center on September 11, 2001 The last two schools mentioned are housed in buildings leased from New York University.

After September 11, all of these schools were evacuated and our contractor, AWL Industries, Inc. (AWL) and our mechanical engineering consultant, Burns and Roe Enterprises, Inc. (B&R) were engaged to rehabilitate the HVAC systems. The necessary work involved retrofitting the central air conditioning ductwork and unit ventilators with additional filtration so that we could maintain acceptable levels of indoor air quality and assure the safe return of the students and teachers.

AWL installed racks to support additional filters in the central system and unit ventilators, and installed the filters. They investigated and balanced the central systems before and after the additional filters were installed and provided pressure gauges at each filter location. In addition, the existing central duct systems were modified and additional booster fans were installed, where necessary, for proper airflow after the new filters were installed.

B&R acted as the BOE's consulting engineer and project manager. They analyzed the existing system and designed the system modifications that AWL implemented. This included all filter rack modifications, filter specifications, air balance evaluations, central duct system modifications and booster fan systems. In addition, they acted as the BOE's project manager in the field, directing the day–to–day activities of the contractor, inspecting their work, assuring construction completion, providing a punch list to assure job completion and reviewing invoices.

Please let me know if you need any additional information.

Yours truly,

Charles M Collins

Charles M. Collins, Director
Architectural and Engineering Services

**Bryant Lenora**

**From:** Robert Cascone [rcascone@roe.com]
**Sent:** Thursday, February 28, 2002 4:04 PM
**To:** Collins Charles; BENSON WILLIAM
**Cc:** MDraice@nycsca.org
**Subject:** Stuyvesant High School Vertical Unit Ventialtor

VUV Sequence of Operations 2-2 ..

Attached is a summary of the control sequence that has been developed for the proposed vertical unit ventilator that has the ability to provide 95% 1 micron filtration.

I will also recommend that the SCA consider this as a standard for classroom heating and cooling units.

RSC

Please see attachment

## Vertical Unit Ventilators

### Features

The features of the control system shall include:

LonMark Certification

Conformance to the LonMark VAV AHU Controller and VAV Space Comfort Controller Functional Profile.

Custom programming to provide the specified Control Sequence of Operations

Expansion capabilities to a LonTalk FTT-10A free topography communications network

Occupied and unoccupied modes

Stand alone operation

Low-temperature detection to prevent coil freeze ups

Discharge air temperature detection to monitor equipment operation and provide system diagnostics

Warm-up and cool-down adaptive logic

Manual output test function for troubleshooting and to manually operate the unit controller in a predefined sequence

Space sensor with motion sensor, setpoint adjustment, and communication jack

Two-pipe change over with two-way valves (See Figure 3)

Variable Speed Operation

Carbon Dioxide Control (See Figure 2)

Economizer Control – modulating outdoor air damper control with a discharge air low limit. Outdoor air dry bulb changeover. (See Figure 4)

Outdoor Air Filtration:
PreFilter: 2" Activated Charcoal
After Filter: 12" Deep Cell 95% Efficiency @ 1 Micron

## LonMark Space Comfort Controller

The space comfort controller shall provide a set of occupied, occupied standby, and unoccupied setpoints. The unit controller shall accept both hardwired and communication occupancy inputs to provide programming flexibility for localized scheduling.

### Binary Inputs

Supply Fan Proving
Space Occupancy

### Binary Outputs

Supply Fan Status
Economizer Damper Position
Heating/Cooling Valve Position

### Analog Inputs

Space Temperature
Outdoor Air Temperature
Return Air Temperature
Heating Setpoint
Cooling Setpoint
Economizer Setpoint
Economizer Minimum Position
Mixed Air Temperature
Discharge Air Temperature
Fan CFM/RPM

### Analog Outputs

Heating Output
Cooling Output
Supply Fan Speed

## Deadband Function Mode

The function of the space comfort controller shall be determined by the occupancy mode, the application mode and the node state.

When the temperature in the classroom increases, the heating valve closes, see Figure 1. The air damper is modulated opened, and finally, the cooling valve is opened.
This sequence is reversed when the temperature drops.

## Occupied mode

The Occupied mode is used when the classroom is occupied as sensed by the room motion sensor. This mode is also the default mode after a reset or a power up.
In order to maintain the classroom air quality, the controller selects the highest of three positions for the damper: the position ordered from the cooling sequence, the position indexed from the air quality control, or the set minimum position for the damper.
At a high carbon dioxide concentration, the position of the damper is set from the air quality control, see Figure 3. At other times, it is set by the temperature control sequence.

The air quality controller sets a outdoor/indoor differential of approximately 700 ppm (adjustable control setpoint).

## Standby mode

The controller reduces the energy consumption in the zone when standby mode is enabled. The neutral zone is permits a temperature deadband to be established between the heating and cooling modes of operation. See Figure 1.

## Unoccupied mode

The unoccupied mode is used when the building is unoccupied as sensed by a lack of motion for a predetermined time period (15 – 30 minutes).
The air quality control is disabled in this mode of operation.

## Off mode

The controller stops running when off mode is commanded from the space occupancy sensor. In this mode frost protection only is active.

## Slave mode

When the network variable nciAppOptions is set so that slave mode is enabled, the following happens:The slave controller goes into off mode and executes copies of output signals from the master controller. The slave controllers shall activate fan coil units to provide heating in the night setback mode of operation. The frost protection in the slave and master controllers shall be activated in the slave mode.

## Configuration Properties

- Occupancy sensor enabled/disabled
- Occupancy sensor normally open/ normally closed
- Heating valve enabled/disabled
- Cooling valve enabled/disabled
- Cooling damper enabled/disabled
- Carbon dioxide sensor and air quality controller enabled/disabled
- Heating valve actuator is of ON/OFF type/three-point increase/decrease
- Slave mode disabled/enabled

Contractor shall provide all LonMark Functional Profiles object details, Network Variable inputs/outputs and configuration properties required per the VAV Controller, Space Comfort Controller, and Configuration Properties required. See Figure 5.

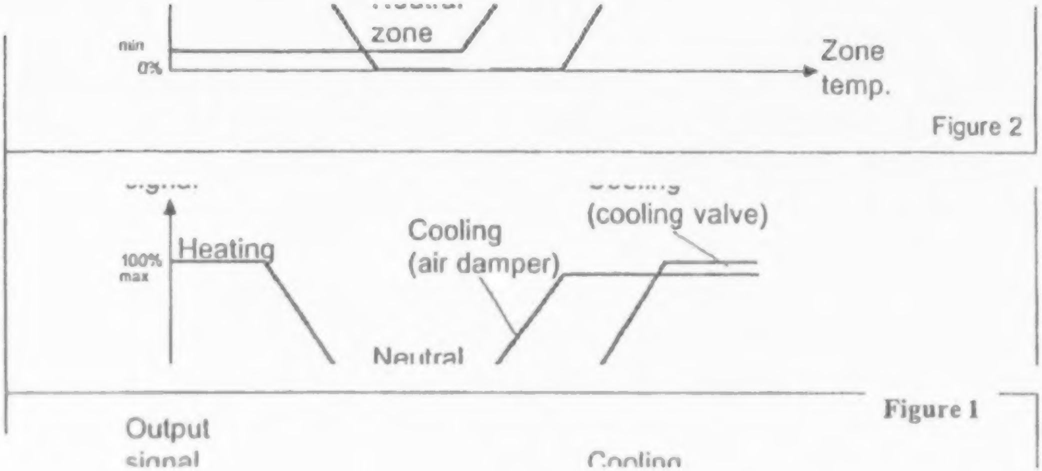

zone
min
0%
Zone
temp.
Cooling
(cooling valve)
Cooling
(air damper)
100%
max
Heating
Neutral
Output
signal
Cooling

Figure 2

Figure 1

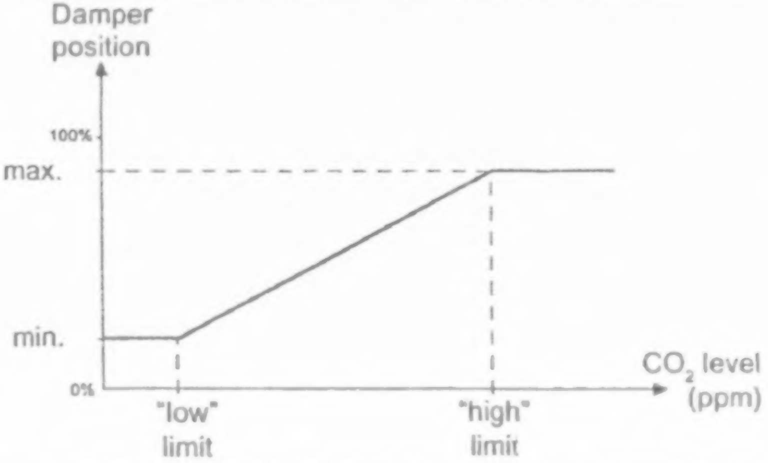
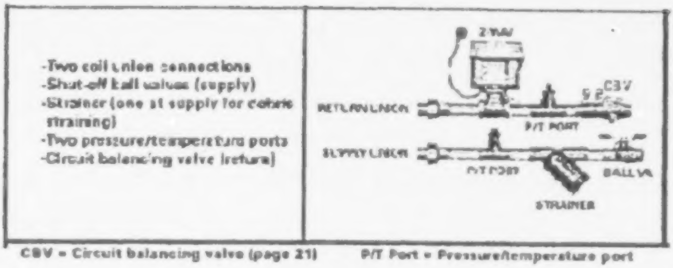


Figure 2



- Two coil union connections
- Shut-off ball valves (supply)
- Strainer (one at supply for debris straining)
- Two pressure/temperature ports
- Circuit balancing valve (return)

2-WAY
CBV
RETURN UNION
P/T PORT
SUPPLY UNION
P/T PORT
BALL VA
STRAINER

CBV = Circuit balancing valve (page 21) P/T Port = Pressure/temperature port

Figure 3

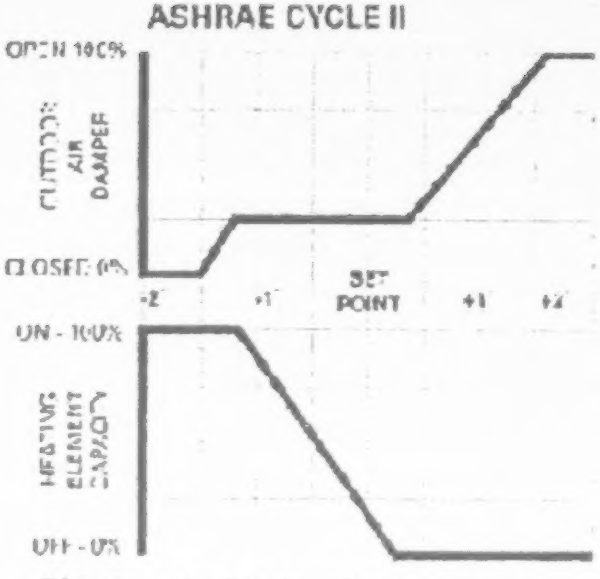


*Figure 4: Cycle charts*

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## SCC – VAV Object Type 8502

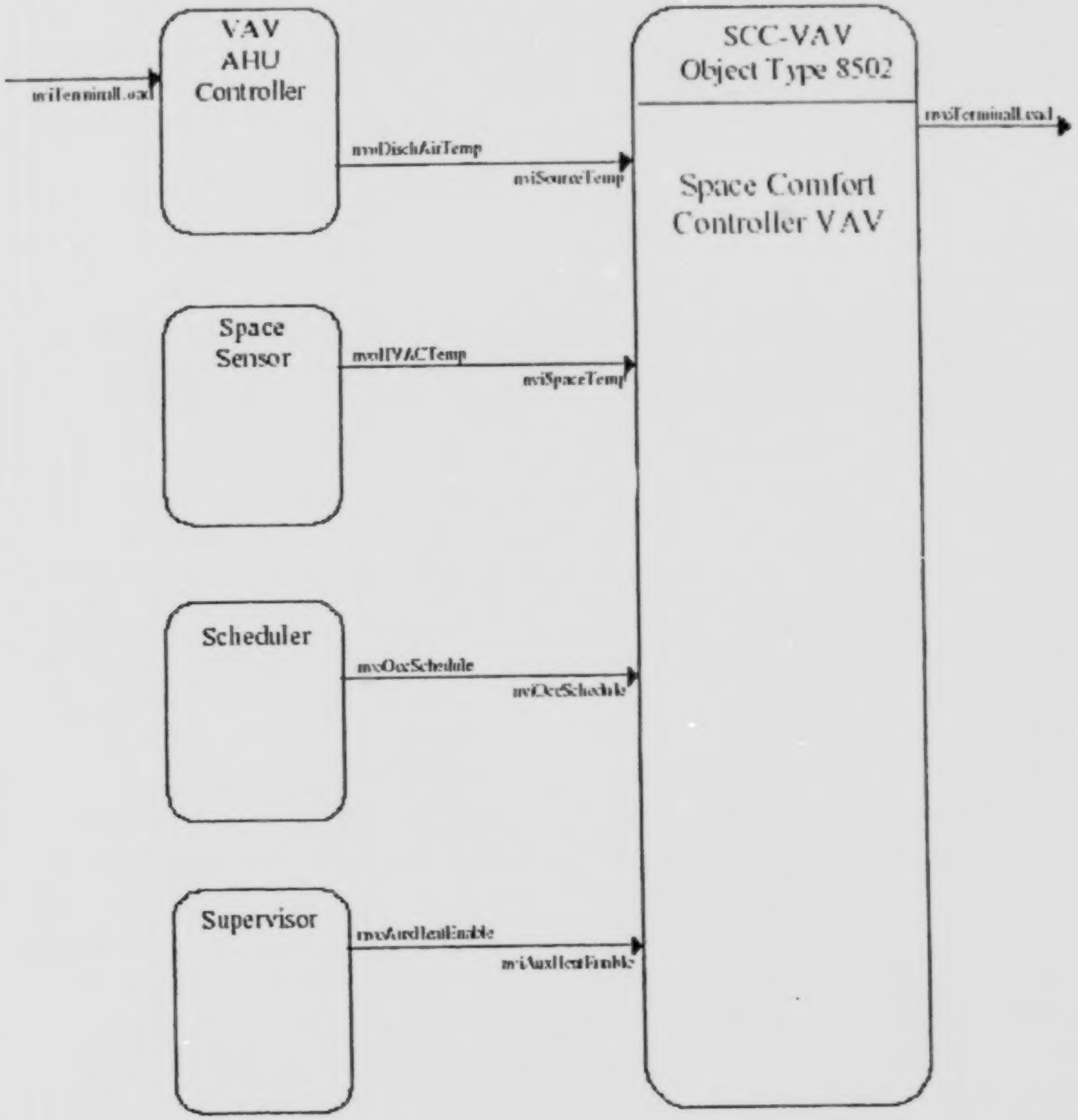
VAV
AHU
Controller
nviTerminalLoad
nvoDischAirTemp
nviSourceTemp
SCC-VAV
Object Type 8502
nvoTerminalLoad
Space Comfort
Controller VAV
Space
Sensor
nvoHVACTemp
nviSpaceTemp
Scheduler
nvoOccSchedule
nviOccSchedule
Supervisor
nvoAuxHeatEnable
nviAuxHeatEnable

**Figure 1.2** VAV System Drawing

**Figure 5:** VAV System Drawing

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# Vertical Unit Ventilators

## Sequence of Operations

### Unoccupied Condition

During the "unoccupied heat" mode (night setback) space temperature shall be maintained by a master/slave interface to the existing horizontal fan coil units. On a call from the space temperature sensor (55'F adjustable setpoint) the heating modulation valves of the fan coils units shall be indexed open in relation to the demand for space heating.
The Vertical Unit Ventilator will not operate in the unoccupied mode and its respective outdoor air damper shall be fully closed and the supply fan off.
In the event the unoccupied space temperature falls below 50'F (adjustable setpoint), the master control system shall cycle the slave horizontal coil units fans on until the unoccupied space temperature setpoint is satisfied (55'F adjustable).

## Occupied Condition - Heating

The Vertical Unit Ventilator and associated slave fan coil units shall be indexed to the "occupied mode" by a room motion sensor. A passive infrared motion sensor incorporated into the space temperature controller shall detect motion. After an adjustable Time-Out-Delay (TOD) period, after the last motion was detected the unit shall revert to night setback.

In the occupied mode the Vertical Unit Ventilator variable speed supply fan shall operate at its minimum motor speed setpoint defined by a predetermined adjustable value (30 - 50% maximum motor speed) or by the requirements of a space "air quality" $CO^2$ sensor.

In this mode the master heating valve of the Vertical Unit Ventilator shall be modulated to maintain the space occupied heating setpoint (70'F adjustable). The space temperature controller shall have a dead band between heating and cooling modes of 6'F - (adjustable set points).

The outdoor air damper shall be held at a minimum position as determined by the space "air quality" $CO^2$ sensor. The supply fan shall operate continuously and shall ramp up from its minimum motor speed to its maximum motor speed in relation to the space heating requirements and the space "air quality" $CO^2$ sensor.

A mixed air sensor setpoint of 30'F (Adjustable) shall limit the outside air damper from opening above its setpoint value. Operation below this value shall annunciate an alarm condition and close the outside air damper to its minimum position.

The slave fan coil units shall be indexed on when the space heating requirements cannot be satisfied by the Vertical Unit Ventilator. The space temperature controller shall index the slave units on when the master heating valve is fully open and the space occupied heating setpoint (70'F adjustable) drops below its setpoint value.

## Outdoor Air Economizer Operation (Up to 100% Outdoor Air)

**The first stage of cooling shall be an "economizer" mode during which all stages of heat are off and the space temperature shall be above its deadband value of 76'F (adjustable).**

The outdoor air and return air dampers shall modulate to maintain the desired space temperature setpoint. A discharge air sensor, mounted in the unit, shall modulate the outside air damper below 55'F (Adjustable) outdoor air temperature towards its minimum position. A mixed air sensor shall prevent economizer operation below 50'F (Adjustable). In the "economizer mode" the ability of the Vertical Unit Ventilator to provide sufficient space cooling shall be limited by the outdoor air temperature and the total C.F.M. rating of the supply fan. The supply fan shall be indexed to its maximum motor speed in during the "economizer mode" of operation.

## Occupied Condition – Mechanical Cooling

The Vertical Unit Ventilator and associated slave fan coil units shall be indexed to the "occupied mode" by a room motion sensor. A passive infrared motion sensor incorporated into the space temperature controller shall detect motion. After an adjustable Time-Out-Delay (TOD) period, after the last motion was detected the unit shall revert to night setback.

In the occupied cooling mode the chilled water coil shall be modulated to provide mechanical cooling after the "economizer mode" has failed to maintain the occupied cooling setpoint temperature of 76"F (Adjustable).

The outdoor damper shall be controlled based on the setpoint of the outdoor air sensor (74'F Adjustable). If the outdoor air dry bulb is above the sensor set point the outdoor air damper shall close to its minimum position. The Vertical Unit Ventilator variable speed supply fan shall modulate to maintain the occupied cooling setpoint temperature of 76"F (Adjustable).
The minimum motor speed setpoint shall be defined by a predetermined adjustable value (30 -50% maximum motor speed) or by the requirements of a space "air quality" $CO^2$ sensor.

In this mode the master cooling valve of the Vertical Unit Ventilator shall be modulated to maintain the space occupied cooling setpoint (76'F adjustable). The space temperature controller shall have a dead band between heating and cooling modes of 6'F - (adjustable set points).

The supply fan shall operate continuously and shall ramp up from its minimum motor speed to its maximum motor speed in relation to the space heating requirements and the space "air quality" $CO^2$ sensor.

The slave fan coil units shall be indexed on when the space cooling requirements cannot be satisfied by the Vertical Unit Ventilator. The space temperature controller shall index the slave units on when the master heating cooling valve is fully open and the space occupied cooling setpoint (70'F adjustable) raises above its setpoint value.

During night setback all mechanically cooling and economizer mode of operation shall be locked out.

## FILTER COST SUMMARY

| ITEM | SCHOOL | | | | |
|---|---|---|---|---|---|
| | Stuyvesant | [redacted] | [redacted] | [redacted] | [redacted] |
| | | | | | |
| 4-Ply Material | 834.86 | [redacted] | [redacted] | [redacted] | [redacted] |
| 4- Ply Installation | 48350.00 | [redacted] | [redacted] | [redacted] | [redacted] |
| Odorguard Material | 11459.00 | [redacted] | [redacted] | [redacted] | [redacted] |
| Odorguard Installation | 101781.62 | [redacted] | [redacted] | [redacted] | [redacted] |
| Bag Material | 540.00 | [redacted] | [redacted] | [redacted] | [redacted] |
| Bag Installation | 2100.00 | [redacted] | [redacted] | [redacted] | [redacted] |
| | | | | | |
| **Totals** | $ 165,065.48 | $ [redacted] | $ [redacted] | $ [redacted] | $ [redacted] |

[redacted]

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## FILTER COST SUMMARY

Replacement

| ITEM | SCHOOL | | | | |
|---|---|---|---|---|---|
| | Stuyvesant | [redacted] | [redacted] | [redacted] | [redacted] |
| | | | | | |
| 4-Ply Material | 834.86 | [redacted] | [redacted] | [redacted] | [redacted] |
| 4- Ply Installation | 5557.50 | [redacted] | [redacted] | [redacted] | [redacted] |
| Odorguard Material | 11459.00 | [redacted] | [redacted] | [redacted] | [redacted] |
| Odorguard Installation | 23708.75 | [redacted] | [redacted] | [redacted] | [redacted] |
| Bag Material | 540.00 | [redacted] | [redacted] | [redacted] | [redacted] |
| Bag Installation | 750.00 | [redacted] | [redacted] | [redacted] | [redacted] |
| | | | | | |
| **Totals** | $ 42,850.11 | $ [redacted] | [redacted] | $ [redacted] | $ [redacted] |

[redacted]

# STUYVESANT H. S.

Note: Costs include filters and fabrication of racks.

FILTER SUMMARY

| UNIT # | SCHED./DESIGN CFM | PH. 1 CFM | PH. 2 CFM | ODORGUARD (SQ. FT.) | 4-PLY (SQ. FT.) | BAGS QTY | MATERIAL COST ODORGUARD | LABOR COST ODORGUAR | TOTAL COST $ | MATERIAL COST BAG | LABOR COST BAG | TOTAL COST $ | MATERIAL COS 4-PLY | LABOR COST 4-PLY | TOTAL COST $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | $/SQ.FT. | $/SQ.FT. | | $/BAG | $/BAG | | $/SQ.FT. | $/SQ.FT. | |
| HVAC-1 | 55,100 | 38,773 | | 120 | N/A | 30 | 6.975 | 0.00 | 837.00 | 18.00 | 70.00 | 2640.00 | N/A | N/A | 0.00 |
| HVAC-2 | 28,380 | 23,270 | | 90.1 | 80.6 | N/A | 6.975 | 57.99 | 5853.45 | N/A | N/A | 0.00 | 1.69 | 61.41 | 5086.21 |
| HVAC-3 | 16,000 | 20,227 | | 36 | 34.8 | N/A | 6.975 | 100.00 | 3851.10 | N/A | N/A | 0.00 | 1.69 | 96.98 | 3433.81 |
| HVAC-4 | 13,000 | 13,650 | | 32 | 28 | N/A | 6.975 | 112.50 | 3823.20 | N/A | N/A | 0.00 | 1.69 | 120.54 | 3422.32 |
| HVAC-5 | 5,000 | 4,413 | | 14.5 | 11.3 | N/A | 6.975 | 193.10 | 2901.14 | N/A | N/A | 0.00 | 1.69 | 230.09 | 2619.10 |
| HVAC-6 | 5,000 | 4,623 | | 14.5 | 11.3 | N/A | 6.975 | 193.10 | 2901.14 | N/A | N/A | 0.00 | 1.69 | 230.09 | 2619.10 |
| HVAC-7 | 17,600 | 17,994 | | 50.6 | 45.5 | N/A | 6.975 | 88.93 | 4852.94 | N/A | N/A | 0.00 | 1.69 | 93.41 | 4326.90 |
| HVAC-8 | 17,600 | 17,755 | | 50.6 | 45.5 | N/A | 6.975 | 88.93 | 4852.94 | N/A | N/A | 0.00 | 1.69 | 93.41 | 4326.90 |
| HVAC-9 | 14,400 | 14,609 | | 50.6 | 45.5 | N/A | 6.975 | 88.93 | 4852.94 | N/A | N/A | 0.00 | 1.69 | 93.41 | 4326.90 |
| HVAC-10 | 17,600 | 18,466 | | 41 | 63.3 | N/A | 6.975 | 87.80 | 3885.98 | N/A | N/A | 0.00 | 1.69 | 53.32 | 3481.98 |
| HVAC-11 | 9,200 | 8,416 | | 32.9 | 30.7 | N/A | 6.975 | 109.42 | 3829.48 | N/A | N/A | 0.00 | 1.69 | 109.93 | 3426.88 |
| HVAC-12 | 7,200 | | | 14.5 | 16.5 | N/A | 6.975 | 193.10 | 2901.14 | N/A | N/A | 0.00 | 1.69 | 157.58 | 2627.89 |
| HVAC-13 | 12,000 | | | 32.6 | 30.7 | N/A | 6.975 | 110.43 | 3827.39 | N/A | N/A | 0.00 | 1.69 | 109.93 | 3426.88 |
| HVAC-14 | | | | 27.8 | 27.8 | N/A | 6.975 | 129.50 | 3793.91 | N/A | N/A | 0.00 | 1.69 | 121.40 | 3421.98 |
| HV-1 | 9,200 | | | 17.8 | 22.9 | N/A | 6.975 | 157.30 | 2924.16 | N/A | N/A | 0.00 | 1.69 | 113.54 | 2638.70 |
| UV-A | 22500 | | | 50.1 | N/A | N/A | 6.975 | 89.82 | 4849.45 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-B | 151000 | | | 314.1 | N/A | N/A | 6.975 | 26.74 | 10590.85 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-C | 42500 | | | 85 | N/A | N/A | 6.975 | 61.47 | 5817.88 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-D | 27000 | | | 59.9 | N/A | N/A | 6.975 | 75.13 | 4917.80 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-E | 6750 | | | 15 | N/A | N/A | 6.975 | 186.67 | 2904.63 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-F | 7000 | | | 14.6 | N/A | N/A | 6.975 | 191.78 | 2901.84 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-G | 18250 | | | 32.5 | N/A | N/A | 6.975 | 110.77 | 3826.69 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-H | 16500 | | | 36.6 | N/A | N/A | 6.975 | 98.36 | 3855.29 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-I | 0 | | | 0 | N/A | N/A | 0 | | 0.00 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-J | 0 | | | 0 | N/A | N/A | 0 | | 0.00 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-K | 6250 | | | 12.5 | N/A | N/A | 6.975 | 224.00 | 2887.19 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-L | 19500 | | | 43.3 | N/A | N/A | 6.975 | 83.14 | 3902.02 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| UV-3 | 172000 | | | 358.3 | N/A | N/A | 6.975 | 23.44 | 10899.14 | N/A | N/A | 0.00 | 0.00 | 0.00 | N/A |
| | | | | | | | | | | | | | | | |
| TOTALS | 714,530 | 182,196 | 0 | 1,647 | 494 | 30 | | | $ 113,240.62 | | | $ 2,640.00 | | | $ 49,185.54 |

**Burns and Roe Enterprises, Inc.**
800 Kinderkamack Road, Oradell, New Jersey 07649
NJ (201) 265-2000 NY (212)563-7700

2002 MAR 14 AM 10:06

March 13, 2002

Subject: Board of Education – City of New York
Professional Consultant Engineering Services for HVAC Equipment
PO 3480219, RFP 10-01, Bid No 20029200281
Task No 2 – HVAC Filtration

Mr. Charles Collins, NYC BOE
NYC Board of Education
Division of School Facilities
28-11 Queens Plaza North
Long Island City, New York 11101

Dear Mr. Collins:

Attached is payment Requisition #5 for $24,261.01 ($23,738.22 Labor and $522.79 Reimbursable). This requisition includes charges associated with the additional; filtration for "ground zero" schools. Expenses through March 1, 2002 have been included.

Similar to previous requisitions, Requisition 5 is for technical HVAC engineering assistance to the Board of Education's Division of School Facilities, assisting in installation of additional filtration for "ground zero" schools. Specifically, the work involved analysis and recommendations for Stuyvesant High School, [redacted] nd including:

- Visiting the school buildings to review existing designs and installations to determine methods, equipment and systems to improve operations and performance.
- Surveying the buildings HVAC system, machinery and controls.
- Analysis of feasibility and engineering issues.
- Development of specifications and Scope of work documents.
- Providing construction support including monitoring the JOC contractors work, inspect quality of work, follow up with contractors for compliance.
- Advising the Board of Education with regard to HVAC equipment.
- Attending Parents Association (PA) and facility committee meetings.

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Likewise, we have broken down our effort by the approximate capital cost of the program by school through January 31,2001 as an indication of our effort. The following table illustrates the breakdown.

| School | | Requisition 4 |
|---|---|---|
| Stuyvesant HS | 40% | $9,704.41 |

Should you have any questions or require additional information, please call.

Very truly yours,

Bill Urban, P.E.
Project Manager

cc: Ms Ruby DaCosta (NYCBOE) w/att
Mr. Harvey Jacobs (NYCBOE) w/att

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BURNS AND ROE ENTERPRISES, INC.
800 KINDERKAMACK ROAD
ORADELL, NEW JERSEY 07649

NYC - BOARD OF EDUCATION
28-11 QUEENS PLAZA NORTH
LIC, NY 11101

CUSTOMER NO. : 111500

INVOICE NO. : 117164

INVOICE DATE : MARCH 13, 2002

PROJECT NO. : 02469002

REF. NO.:

PROJECT MGR. : URBAN, WILLIAM J.

| DESCRIPTION | TOTAL AMOUNT |
|---|---|
| PROJECT: 02469002 STYVESANT HS AIR QUALITY & FILTRATION | |
| TO INVOICE REQUISITION NO. 5 | $24,261.01 |
| SUBTOTAL - COST | $24,261.01 |
| **TOTAL THIS INVOICE** | $24,261.01 |

*** TOTAL GROSS COST:

| | |
|---|---|
| CURRENT COST: | $24,261.01 |
| PREVIOUSLY INVOICED: | 75,871.85 |
| CUMULATIVE COST: | $100,132.86 |

*** TOTAL RETENTION:

| | |
|---|---|
| CUMULATIVE COST: | $.00 |

*** TOTAL NET COST:

| | |
|---|---|
| CURRENT COST: | $24,261.01 |
| PREVIOUSLY INVOICED: | 75,871.85 |
| CUMULATIVE COST: | $100,132.86 |

BEST COPY AVAILABLE

PLEASE REMIT TO: BURNS AND ROE ENTERPRISES, INC.
P.O. BOX 198842, ATLANTA, GA 30384-8842

INVOICE PREPARED BY MECKY MARTINO 201-986-4661 C1

**TDX** CONSTRUCTION CORPORATION

25-24 Jackson Avenue, L.I.C., New York. 11101

718-472-9350
718-472-9256 fax
www.tdxconstruction.com

March 22, 2002

New York City School Construction Authority
30-30 Thomson Avenue
Long Island City, New York 11101

**Attn:** **Alex Lempert**
**TDX/SCA Contract:** **C000008240**
**Re:** **Preliminary Budget For Cleaning The Entire HVAC System**
**School:** **Stuyvesant High School**

Dear Mr. Lempert;

At your request TDX has worked up a preliminary budget estimate for the cleaning of the HVAC System at Stuyvesant High School. Upon authorization and directive to proceed, TDX will schedule a site visit with a minimum of three (3) qualified sub-contractors to develop and refine the current scope in order to come up with an actual cost.

Estimates are broken into to groups, School *(Open)* and School *(Closed)*:

Open: refers to the school being occupied and the contractors having to work nights, weekends and around the Students schedules. This includes these labor and cost increasing items:

- Mobilization and Demobilization of labor, materials and equipment on a daily basis.
- Installation and removal of proper protection for work areas on a daily basis.
- Clean up of all areas worked prior to school start every morning school is in session.

Closed: refers to the school being unoccupied for a given time frame, (i.e. Summer break). The contractors would be allowed to perform their work around the clock seven days a week without interruption.

| **Items:** | **Open:** | **Closed:** |
|---|---|---|
| Contractor's Costs | | |
| Cleaning of Ducts (Supply and Return) | $600,000.00 | $500,000.00 |
| Cleaning of Ventilators | $250,000.00 | $150,000.00 |
| Encapsulation of linings in ducts | $80,000.00 | $60,000.00 |
| Replacement of linings in air handlers if needed | $30,000.00 | $30,000.00 |

| | | |
|---|---|---|
| Balancing of System | $100,000.00 | $70,000.00 |
| Cleaning of open Plenums | $200,000.00 | $200,000.00 |
| Cleaning of Intakes, Fans, Coils and Dampers | | |
| Cleaning of all Diffusers, Grills and Volume Dampers | $75,000.00 | $50,000.00 |
| Cleaning of all Exhaust Ducts, Fans, Grills, Etc. | $250,000.00 | $180,000.00 |
| **SUB-TOTAL** | **$1,585,000.00** | **$1,240,000.00** |

If you have any questions regarding this budget, please call me at my office.

Sincerely;

Erik Rappel
TDX Construction Inc.

| | | |
|---|---|---|
| CC: | D. Awoonor | TDX Construction |
| | A. Spanarkel | TDX Construction |

**H.A. Bader Consultants, Inc.**
Environmental Consulting Engineers
88 Bleecker Street, Suite 4E
New York, New York 10012

Howard A. Bader, P.E.
President

TEL: 212-475-4122
FAX: 212-477-8941

October 25, 2001

Stuyvesant High School Parents' Association
345 Chambers Street
New York, New York 10282-1099

Dear Parents:

I have been reviewing the Indoor Air Quality (IAQ) testing data collected inside and immediately outside Stuyvesant High School by ATC Associates Inc. Particulate levels are being measured at 2.5 microns ($PM_{2.5}$).

Based on EPA's Air Quality Index ,the level of concern for the general population is 65 ug/m$^3$ over a 24 hour period. EPA lowers the level of concern for sensitive groups, including children, the elderly, and people with heart or lung disease to 40 ug/m$^3$. The EPA states that shorter term peaks are of potential concern for sensitive groups.

According to the EPA, when outdoor levels exceed 40 ug/m$^3$, people with respiratory disease, such as asthma, should limit outdoor exertion. Also the EPA states, when outdoor levels exceed 65 ug/m$^3$, all people, especially the elderly and children should limit prolonged outdoor exertion. The EPA Web site for particulate testing related to the World Trade Center disaster states "most healthy adults and children are expected to recover quickly from any symptoms of short-term exposure like coughing, wheezing, or eye and throat irritation. EPA expects the long-term risk from these short-term exposures to be low."

Following is a summary table of $PM_{2.5}$ particulate testing available to date:

| Date | Outdoor Readings (ug/m$^3$) | Indoor Range[1] (ug/m$^3$) | Comments |
|---|---|---|---|
| 10/9 | 20, 30 | 10-39 | |
| 10/10 | 16, 18 | 12-55 | |
| 10/11 | 33, 42 | 18-43 | |
| 10/12 | 58 | 18-50 | 98 readings, none exceeded 65 ug/m$^3$, 31 exceeded 40 ug/m$^3$ Average was 35 ug/m3 |
| 10/15 | 12, 14 | 9-33 | |
| 10/16 | 25, 35 | 12-37 | |
| 10/17 | 5, 8 | 4-27 | Average 8 ug/m$^3$ |
| 10/18 | 9, 14 | 4-26 | |
| 10/19 | 21, 75 | 13-47 | 99 readings, none exceeded 65 ug/m$^3$, 17 exceeded 40 ug/m$^3$ |
| 10/22 | 145, 74 | 27-104 | 99 readings, 38 exceeded 65 ug/m$^3$, 83 exceeded 40 ug/m$^3$, Average 62 ug/m$^3$ |
| 10/23 | 108, 136 | 52-132 | 126 readings, 107 exceeded 65 ug/m$^3$, all exceeded 40 ug/m$^3$ |
| 10/24 | 76, 81 | 27-86 | 99 readings, 26 exceeded 65 ug/m$^3$, 91 exceeded 40 ug/m$^3$ |

[1] Each day approximately 100 total readings are taken throughout the building. This includes classrooms, common areas, hallways, cafeteria, gymnasium, etc.

The ATC readings outside Stuyvesant indicate that the dust levels vary outdoors. An increase in outdoor levels corresponds to an increase in indoor levels in the school. The dust can enter the building through open windows and doors, building envelope infiltration and the heating, ventilating and air conditioning (HVAC) units. The HVAC systems are suspected as the primary source for dust entry.

Windows and doors should be kept closed as much as possible. Based on my recommendations, the Parents' Association had requested that the Board of Education operate HVAC systems (central air handlers and unit ventilators) on minimum outdoor air, while still maintaining acceptable indoor air quality (as measured with carbon dioxide).

Based on my recommendations, the Parents' Association also requested that filters with the highest efficiency possible (per manufacturers recommendation) be used in all HVAC equipment. To date the filters in the classroom unit ventilators (approximately 300 units) have not been upgraded.

This afternoon I inspected the perimeter of the school. There was a significant amount of visible dust on West Street and the sidewalk/plaza areas on the south and east side of the school. The streets are frequently wetted by the Department of Sanitation, however the dust is not removed. When the roadway dries, some of the dust becomes airborne. At the time of my visit it was very windy and dust could be seen blowing in the air. Dust levels were high enough to cause immediate eye irritation. The Chambers Street Bridge was very dusty.

The dust levels in the school are unacceptable and represent a potential health concern. This is of particular concern because the composition of the dust and potential health effects is not completely known. The HVAC filtration system should be upgraded as soon as possible. The school perimeter roads and walkways should be HEPA vacuumed and wet cleaned as required to reduce dust levels. The bridge should also be cleaned frequently. If you have any questions, please call.

Sincerely,

Howard A. Bader, P.E.
President

# ENVIRONMENTAL HEALTH AND SAFETY COMMITTEE
# STUYVESANT PARENTS ASSOCIATION
## STATUS REPORT
October 26, 2001

## I AIR QUALITY

Probably the health concern uppermost in the minds of most Stuyvesant parents and students is the issue of air quality, or, more specifically, the possible presence of airborne contaminants and related potential adverse health effects. Within the context of the World Trade Center disaster and the reoccupancy of the Stuyvesant building, this concern translates into two issues - outdoor air quality and indoor air quality.

The collapse of the twin towers released many contaminants into the air. Given that subsequent ongoing recovery operations are likely to continue to release additional contaminants for approximately the next 12 months, the questions become: Are our children and school staff being exposed to harmful contaminants when they travel to and from school? And, can we adequately protect the indoor school environment from further contamination from the outside?

Almost from day one, a large number of federal and local government agencies has been monitoring air (and soil and water) quality in lower Manhattan. Additional sampling has been conducted by private vendors, unions, and activist organizations. Toxic substances being monitored include asbestos, lead, fiberglass, silica, PCBs, mercury and other heavy metals, benzene, dioxin, and fine particulate matter. Public ally released government data and accompanying government statements have indicated, with some exceptions, that outdoor levels of contamination are much lower than had been initially feared and that most measurements are below regulatory levels. Similar data and assurances regarding indoor environmental quality at Stuyvesant have been issued by the Board of Education since the return to school on October 9.

Since our children were at Brooklyn Tech, the PA has attempted to ensure that a return to Stuyvesant would occur only when the streets were safe for walking and the building was safe for occupancy. Partly as a result of the aggressive role played by the PA, the entire Stuyvesant building underwent a full asbestos abatement. The PA also received verbal assurances that the ventilation system had been cleaned, filters upgraded, and outside air intakes closed, that the pool would be drained and cleaned, that additional indoor and outdoor monitoring would continue with results shared daily with the PA's expert, that windows would remain closed, that sidewalks and the footbridge would be cleaned several times a day, and that an effective dust control strategy for barge and truck traffic would be implemented. We believed that these measures, when implemented, would protect our children against possible exposure to toxic substances while indoors and that limiting their time outdoors to short walks to and from the subway would not result in significant exposure. Nevertheless, reoccupancy occurred without the consent of the PA because our expert was not given sufficient opportunity to evaluate cleanup protocols or clearance test results. (Of course, the Board of Education is not required to obtain the consent of the PA.)

What has occurred since our return on October 9?

1. We learned that, despite promises, there has been no evaluation of the entire ventilation system for possible contamination, that the ventilation system has not been cleaned, that filters have been changed but not yet upgraded, that outside air intakes for the central ventilation system and for the room unit ventilators were not closed to permit only minimal intake of air, and that windows remain open. We are concerned that these measures permit the reentry of outside contaminants into the school building.
2. The Board of Education has subsequently increased the amount of outside air entering the school after obtaining elevated readings of carbon dioxide ($CO_2$) in several

classrooms. Increased $CO_2$ levels, while not harmful, indicate inadequate supply of fresh outdoor air and/or inadequate exhaust of stale indoor air. In normal circumstances, inadequate ventilation is associated with comfort issues and reversible health symptoms and is corrected by increasing the amount of outside air being supplied. In this extraordinary circumstance, we don't believe that "fresh" outdoor air is available. Rather we feel it is safer to reduce or eliminate the entry of outside air and thereby reduce the possibility of entry of toxic substances with potentially irreversible health effects.

3. The Board of Education, despite promises, has not yet met with the manufacturer of the ventilation system to determine if or how the system can be retrofitted to accommodate HEPA filters (the only filters rated to protect against asbestos fibers).
4. We learned that, despite promises, the pool was not drained or cleaned prior to students' return.
5. We learned that, despite promises, the bridge is not being regularly cleaned to help prevent contaminants from being carried into the building.
6. We learned that the Board of Education has been unsuccessful in moving or improving the truck and barge operation.
7. We learned that, despite promises, the Board of Education failed to notify the PA, and more importantly, did not notify parents or children, that recent monitoring results inside Stuyvesant indicate levels of lead and particulate matter above regulatory levels on some occasions.
8. To date, the PA has not received a written response from the Board of Education to our request that it implement the PA expert's recommendations. The PA has not received a response to our request for a contingency plan in the event that environmental monitoring results indicate that the school is not safe for occupancy. The Board did respond verbally that in such a circumstance we would return to Brooklyn Tech.
9. To date, the Board of Education has not provided the PA with certification from any government agency that the building is safe for occupancy, not has it provided various safety protocols or written procedures.
10. We also learned that the EPA did not release to the public some monitoring results that appear to contradict or weaken its assertions of environmental safety. EPA data obtained by environmental activists using Freedom of Information Act requests appear to show more frequent and higher measurements of asbestos, heavy metals, PCBs, dioxin, benzene, and other toxics in and around the World Trade Center area than were previously acknowledged.

## II THE BARGE OPERATION

There has been considerable discussion about the barge located on Pier 25 north of the school. The following is our current assessment of the issues. First, there is a very well established professional methodology for dealing with such issues. When faced with an environmental hazard professional protocol dictates a three-step approach:

1) The first line of attack in such events is the complete **REMOVAL** of the hazard. If it is determined after rigorous and professional analysis that the barge cannot be moved without imposing very serious functional limitation on the debris removal efforts then it is dictated that a second level of action must be taken which is
2) **PROTECTION** against the hazard. In the case of the barge this means active covering of the trucks and spraying of all material according to EPA dictated protocols. Finally, if protection cannot be found workable then professional protocol dictates,
3) **EDUCATION** of those potentially exposed to the hazard on how to deal with

all possible events flowing from the presence of the hazard.

Experience dictates that, in terms of effectiveness, there is absolutely no substitute for REMOVAL of the hazard. Options 2 and 3 are prone to human error and poor procedures design. Education is an absolute last resort. Based on our current understanding of the issues we have the following to report. Is the barge a hazard? There has been some question as to whether the barge actually constitutes a HAZARD. Again there are professional protocols for making such determinations. Such definitions, reduced to their essence, are: If the presence of a physical, chemical or psychological event or substance is present to such a degree that it may impair the health or well being of individuals exposed to such an event then such an event or incidence is deemed a HAZARD.

The barge is a HAZARD to our children in two primary ways:

1. **PHYSICAL HAZARD** - The archeology of the WTC site is complex and changing literally on an hourly basis. It is safe to say that this debris removal effort has never been more complex or difficult. We acknowledge these issues. However, it is thought that the bottom 40 floors of the North Tower and the bottom 10 floors of the South Tower contain asbestos. The amount of asbestos and its current disposition is a point of considerable debate. However, what is not in debate is the fact that not all of this debris has yet been reached or removed. Removal and carting of this material to the Barge constitutes an unacceptably high risk to our children and everyone along the truck route to the barge. No amount of spraying or covering will bring this problem within acceptable ranges.
2. **PSYCHOLOGICAL HAZARD** - The barge is a hazard from a second point: As any parents know who have actually visited the school, Stuyvesant is well within the physical and psychological perimeter of ground zero. The noise, vibration and activity pushed north by the location of the barge place a significant, yet less perceptible stress on our children. Please understand that these factors are an accumulation of factors including the noise, vibration, dust, smell, police presence, military presence, emergency presence, repeated visual presence of wreckage in various forms identifiable by the children and seen from the windows of the school. These factors combine to produce an environment of heightened stress. This is not the opinion of this committee but the basis of sound research. An accumulation of such factors is known to have a negative effect on complex human tasks including ability to focus and learn. The overall quality of the environment in terms of noise, military activity, vibration and security at and around Stuyvesant is being dramatically affected by the location of the barge. Removal of the barge will allow these less tangible but important factors to be dramatically reduced. Stuyvesant would be moved into a zone much less physically and emotionally stressful for our children.

Summary of barge issues:

1) **REMOVAL**: We have been unable to gain any access to a professionally executed analysis of alternate barge placements. This is a fundamental error on the part of BOE. Such analysis must be requested and obtained. There is no technical reason for not executing this analysis in light of the obvious physical hazards presented by the barge location. Attempts to obtain a response from BOE on this important question have gone unanswered.
2) **PROTECTION**: We believe that measures to PROTECT our children from the hazards of the barge are not being followed or implemented in a comprehensive manner. It is unclear why this process is not being followed. The fact remains that protection is not being implemented effectively. Attempts to obtain a response from BOE on this important question

have gone unanswered.

3) **EDUCATION**: We have requested on numerous occasions emergency egress plans. We have not been provided with any data on how to deal with the barge in this manner. Attempts to obtain a response from BOE on this important question have gone unanswered.

4) **OUTREACH**: We are working with the community surrounding the school and with other schools in the area on these issues. After meeting with the leadership of the Parents' Associations of IS 89, PS 89, PS 234, and Stuyvesant, the Youth Committee of Community Board #1 resolved, among other items, that "The barge located at Pier 25 must be moved to avoid the continued dust created at that site, which is downwind from our schools. There must be demonstrated enforcement of EPA requirements concerning the washing and covering of the trucks." Community Board #1 voted upon the resolution. The chairperson of Community Board #1 has informed us that they are making a formal request to the Mayor for an oversight agency to handle cleanup and other issues like the barge at Pier 25. They recommend that letters and e-mails be sent to the Mayor reiterating this position and the potentially hazardous conditions the community is living under. Letters and emails should be sent to:

Mayor Rudolph Giuliani
City Hall
New York, NY 10007
Email: mayor@cityhall.nyc.gov

## III STUDENT AND FACULTY HEALTH SYMPTOMS

In a letter sent to the parents by the administration, it was indicated that, as of last week, approximately 90 students and teachers reported to the physician's office at Stuyvesant manifesting a variety of signs and symptoms. At our last PA meeting, a show of hands indicated that more than twice this number was probably more accurate. We have been informed by the Board of Education that an epidemiologist from the Centers for Disease Control in Atlanta and assigned to work with the NYC Department of Health would review the data and attempt to perform an evaluation of the health implications regarding these symptoms.

The Chief Physician from the BOE indicated that she would provide some results this week regarding this epidemiological evaluation. The PA suggested that the number of students and faculty effected was under-reported and that an interactive questionnaire addressed to parents on our website might be an effective tool to assist in a more accurate approach to data collection regarding student/faculty illness.

This offer was not accepted nor were any results from the epidemiologist provided. Our request for the name and telephone number of the epidemiologist is still unanswered. In light of recent disclosures regarding general air quality and the potential effects of identified contaminants in and outside the school, it is strongly suggested that an epidemiological evaluation considering the most recent environmental data and the potential effects on health and safety of the school population be made available as soon as possible.

PA Environmental Health & Safety Committee

**STUYVESANT HIGH SCHOOL PARENTS' ASSOCIATION**
345 Chambers Street
New York, NY 10282-1099
(212) 312-4800 • www.stuypa.org
PA Hotline: (212) 312-4838

October 26, 2001

Dear Parents:

Pursuant to the motions voted upon by the parents at our General Meeting of October 16th, the PA Health and Safety Committee and members of the PA Executive Board have been working diligently to cause the Board of Education to implement the recommendations of the PA's Expert, to provide the PA with the various safety protocols and procedures and with certifications from State and Federal air-monitoring agencies, and to come up with a contingency plan in case environmental monitoring indicates that the school is uninhabitable for any period of time. We have also been working with Community-based organizations and local schools on the issue of the barge. We refer you to the enclosed status report from the PA Health and Safety Committee and to Mr. Bader's letter of October 25th.

In order to address the major issues facing us, the PA Health & Safety Committee is seeking the immediate implementation of an upgraded air-conditioning system capable of utilizing high-efficiency filtration in order to reduce or eliminate the intrusion of outdoor contaminants and gases into the school. Additionally, we are continuing to pursue the above-mentioned courses of actions with the Board of Education, and we are hopeful that they will be implemented. We will inform you of progress on the PA website.

**The next PA General Meeting has been rescheduled for Tuesday November 13th at 7:00pm at Stuyvesant High School (hospitality at 6:30pm).** The agenda for the meeting is to review the environmental situation at the school, and to decide on solutions.

As many parents have asked us how they can make their concerns known to Chancellor Levy, we are providing you with the Chancellor's addresses:

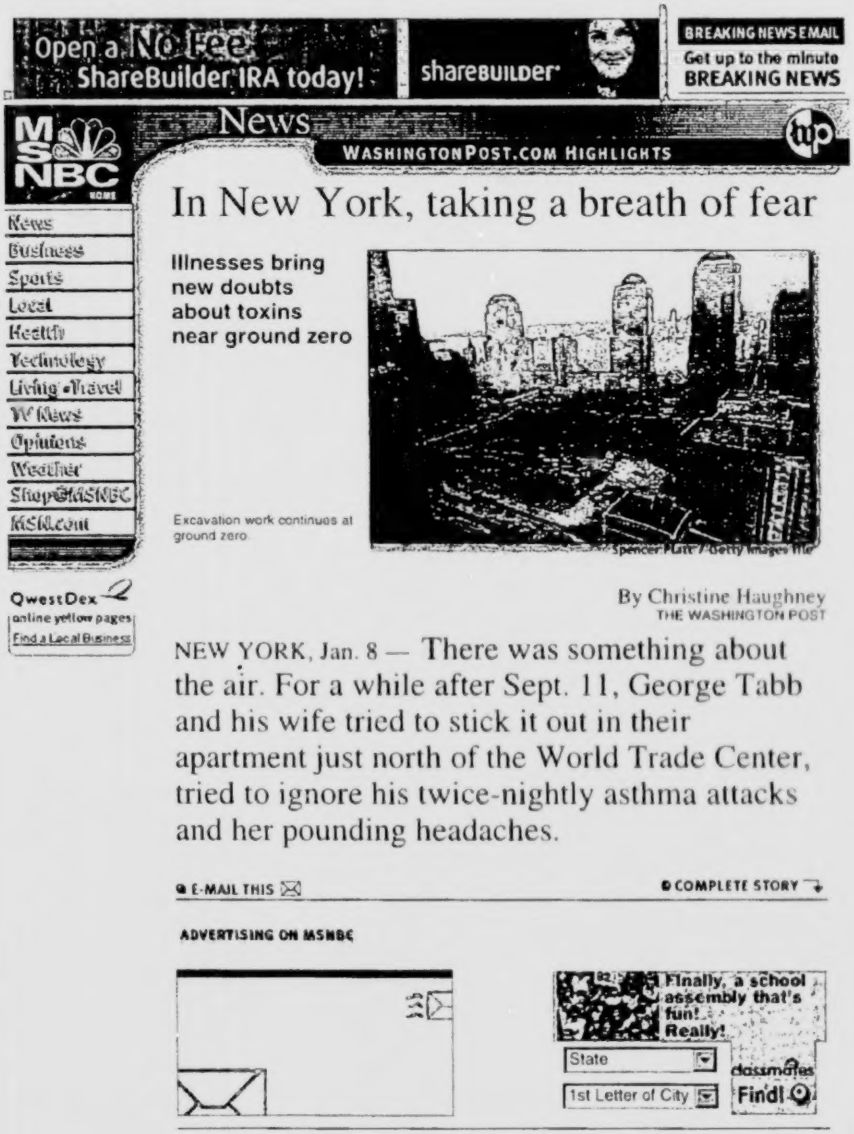
Chancellor Harold O. Levy
NYC Board of Education
110 Livingston Street
Brooklyn, N.Y. 11201
Fax: 718-935-3383
e-mail: chancellor@nycboe.net

If you write to the Chancellor, please send us a copy of your communication by e-mail to: stuypa@yahoo.com I look forward to seeing all of you at our meeting.

Sincerely,

Marilena Christodoulou
PA President

# News Selections from the Web, Winter, 2002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## In New York, taking a breath of fear

Illnesses bring new doubts about toxins near ground zero

Excavation work continues at ground zero

Spencer Platt / Getty Images file

By Christine Haughney
THE WASHINGTON POST

NEW YORK, Jan. 8 — There was something about the air. For a while after Sept. 11, George Tabb and his wife tried to stick it out in their apartment just north of the World Trade Center, tried to ignore his twice-nightly asthma attacks and her pounding headaches.

"No one knows what was burning

EVENTUALLY, THEY moved in with Tabb's stepfather. But Tabb still goes home to pick up his mail,

http://www.msnbc.com/news/683771.asp 1/8/02

down there. I am concerned that in five years or 10 years, I'm going to be part of a cancer cluster."
**— GEORGE TABB**

and within 20 minutes the metallic taste returns to his mouth, and the wheezing.

"All of a sudden, boom, I've got a nosebleed, the asthma, a headache," he said.

Recently Tabb received evidence that the air in his apartment may be as dangerous as he suspects. Independent tests — results of which are disputed by the city — found that dust taken from an air vent in his apartment building's hallway contained 555 times the suggested acceptable level for asbestos. Samples from a bathroom vent show dangerous levels of fiberglass.

"No one knows what was burning down there" at ground zero, he said. "I am concerned that in five years or 10 years, I'm going to be part of a cancer cluster."

Nearly four months after the World Trade Center attacks, the fires there are largely extinguished. But fears of the toxic brew left behind in lower Manhattan's air remain — as do concerns that the U.S. Environmental Protection Agency and other government agencies did not warn residents sufficiently or soon enough of the dangers.

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Many of those who live or work downtown report strikingly similar symptoms: nosebleeds, sore throats, bronchial infections and an endless racking cough.

"People's airways are narrowing down," said Dr. Stephen Levin, medical director of the nationally renowned Mount Sinai I.J. Selikoff Center for Occupational and Environmental Medicine. "We have cases of new onset reactive airway disease for people who were in excellent physical condition prior to September 11th."

About one-fourth of the city's firefighters have complained of severe coughing after working at ground zero, and more than a thousand have filed notices of claims against the city. Last week four Port Authority police officers were reassigned from the site after they tested positive for elevated mercury levels in their blood.

Dozens of students at nearby Stuyvesant High School have complained of rashes, nosebleeds, headaches and respiratory infections. Three teachers have left because of respiratory problems.

"I'm really concerned," said Marilena Christadoulou, head of the school's Parents' Association. "It's a concern that comes from the whole unprecedented and unknown nature of what is down at ground zero."

The EPA, which has conducted thousands of tests of Lower Manhattan's air

**LATEST DEVELOPMENTS**

THE WAR

since Sept. 11, has repeatedly assured residents that the air is safe to breathe. Doctors note that some symptoms could be caused or enhanced by stress — and many will undoubtedly dissipate as the last smoldering fires go out and the air grows clearer. But Levin and others fear the unpredictable effects of the combination of many dangerous substances released into the downtown air could lead to significant long-term health problems.

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- WashPost: Taliban emptied country's banks
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THE HOME FRONT

- WashPost: Illnesses at ground zero raise fears
- WashPost: Thousands of deportees sought
- Chicago, L.A. air incidents
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"Nobody knows," said Regina Santella, a professor at the Mailman School of Public Health at Columbia University and director of the National Institute of Environmental Health Sciences Center. "We know what the monitoring data tells us and we know the symptoms of what people have. It's just hard to reconcile the two pieces of information."

**EPA'S ROLE QUESTIONED**

In the weeks after the World Trade Center towers fell, tens of thousands of New Yorkers tried to decide whether it was safe to move back into apartments and businesses near the site of the attacks. The EPA played a leading role in calming those fears.

"I am glad to reassure the people of New York . . . that their air is safe to breathe and their water is safe to drink," EPA Administrator Christine Todd Whitman said a week after the attacks. "The good news for the residents of New York is that the air, while smoky, is not dangerous," an EPA spokeswoman told the Los Angeles Times at about the same time. And at the end of September, another spokeswoman, citing recent tests for asbestos, told the New York Daily News: "There was not a significant risk, even in the early days."

The agency released selected test results that seemed to buttress those assertions.

But the EPA also found more troubling results, and it did not release that data

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until after the nonprofit New York Environmental Law and Justice Project filed a Freedom of Information Act request. These tests found elevated levels of dioxin, PCBs, lead and chromium, all toxic substances, in the air, soil and water around the site.

In a Sept. 26 EPA test, for example, three of 10 samples showed elevated readings for lead. Exposure to lead can damage the kidneys and central nervous system, and is especially dangerous to children. An Oct. 11 EPA test found benzene, a colorless liquid that evaporates quickly but can cause leukemia in long-term exposure, measured 58 times above the federal Occupational Safety and Health Administration's limit.

Those results were not released until late October.

EPA spokeswoman Bonnie Bellow said the late release was an oversight, caused by the chaos of those first weeks. She added that the agency had performed 3,561 tests for asbestos in New York, and only 29 of those recorded higher levels than the federal standard.

But Joel Kupferman, the environmental law project's executive director, is not convinced.

"They've created this false climate that things are safe," he said. "They're trying to insinuate that since September 11th, the problem is gone and it's going to get better."

Alerted to concerns about Tabb's building, he said, the project hired an independent industrial hygienist to conduct tests of surfaces there on Dec. 3, using methods published by the American Society for Testing and Materials. The tests found the presence of settled asbestos dust 555 times above the suggested acceptable level.

"I am glad to reassure the people of New York ... that their air is safe to breathe and their water is safe to drink."
**— CHRISTINE TODD WHITMAN**
EPA administrator, speaking a week after the attacks

Asked about those results, spokesman Geoff Ryan of the city's Department of Environmental Protection said the department does not recognize this type, and that its own tests at the building, done on Dec. 12, had come back negative.

Scientists with HP Environmental Inc. of Reston, Va., warn that the asbestos dust in Lower Manhattan is so finely pulverized that the EPA's more conventional tests may not pick it up. The company tested the air forthe Port Authority of New York and New Jersey following the 1993 World Trade Center bombing, andit returned after Sept. 11 to test for dangerous levels of asbestos. Their first tests on Sept. 21 and 22 found that the air was safe.

But follow-up tests, aimed at detecting finer particulate matter, recorded much higher levels of contamination. Now they suspect that asbestos is embedded in the walls and carpeting of nearby buildings, according to the study team's leader, Hugh Granger.

EPA officials offer conflicting advice at this point. They say the apartments and office towers around ground zero are safe — but they advise landlords to seek professional asbestos cleaners. And they've advised all workers on the site to wear respirators.

"There is nothing we have found that is at a significant level," said Bellow of the EPA, "that would say you should not come here to live or work."

Some environmental experts say that the EPA, at the very least, failed to promptly communicate test results to the public. The agency was too quick, they said, to interpret a few test results as a clean bill of health.

"The public did not receive the information it needed in a prompt fashion."
**— ERIC GOLDSTEIN**
Natural Resources Defense Council

"The public did not receive the information it needed in a prompt fashion," said Eric Goldstein of the Natural Resources Defense Council, who is working on an environmental assessment of the World Trade Center area. Asked about the EPA's early assurances that the air was safe, he said: "A week after this event it would have been very hard to make conclusive statements about air quality in either direction."

Kathryn Freed, a City Council member until her term ended Dec. 31, is still worried. She lives a few blocks from the World Trade Center site and has suffered from bronchitis and nosebleeds.

"They should be measuring us. They should be monitoring us," she said. "There's like a disconnect between what's actually happening here and what they're saying."

## PROBLEMS AT A NEARBY SCHOOL

Stuyvesant High School, one of the city's most prestigious public schools, reopened to students on Oct. 9. Five blocks north of the World Trade Center site, it is next to the pier where rubble from ground zero is loaded onto barges to be taken to the Staten Island landfill.

From the start students and teachers complained of eye and respiratory problems. When the Department of Health announced that students could report their illnesses for a study, teenagers waited in line for more than an hour outside the nurse's office.

Sophomore Georgia Faust said her eyes became infected, "watering so much it would feel like you're peeling onions." Several students needed inhalers to rid themselves of sinus infections.

The city's Board of Education insists the site is safe, and that its air quality is monitored each day. And special floor mats have been installed at the entryways to prevent students from tracking in dust.

"There's something in the air and that's dust," said spokeswoman Catie Marshall. "But it's not the kind of thing that's going to have a long-term effect."

When Brooklyn firefighter Palmer Doyle arrived at the World Trade Center after the second tower collapsed, there was one respirator for 47 firefighters. He worked almost a month of 12-hour shifts wearing a flimsy paper mask. Later in October, his hoarseness, bronchitis and a hacking cough kept him off the job work for 16 days.

"Guys are a little scared. They're nervous," he said. "We know what environment we worked in and it wasn't healthy."

The Uniformed Firefighters Association estimates that about one-third of its 9,000 members suffer from the "World Trade Center cough."

The Uniformed Firefighters Association estimates that about one-third of its 9,000 members suffer from the "World Trade Center cough." Tom Manley has it too; he's a union chief who spent countless hours at ground zero consoling relatives and digging for victims. He carries an inhaler and cough medicine. "You wake up in the morning with a heavy cough, which I've never had before," he said. "You can't breathe."

David Prezant, a doctor who has spent 15 years with the New York Fire Department, says he is more concerned about chemicals than dust: "There is treatment for particulate matter exposure," he said. "There is no treatment for PCBs."

**APARTMENT ILLS**

Tribeca and Battery Park City are two of this city's newest residential neighborhoods, the former constructed out of old industrial lofts, the latter on landfill. Thousands of young families flocked here. Now the area's proximity to ground zero has many talking about getting out. Who wants their children exposed to the air and dust?

George Tabb and his wife say their symptoms disappear within 48 hours of leaving their Tribeca apartment. But the landlord refuses to tear up their lease. Tabb's insurance company won't pay to clean his apartment of dust and asbestos until his landlord cleans up the building's ventilation system. Management started a cleanup last month,but not an asbestos abatement.

AMERICA AT WAR

- War coverage
- The home front
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The Tabbs had planned to start a family. The city Health Department recently stated that the air is safe for pregnant women. But the Tabbs aren't buying that.

"We're going to have kids," he said, "and I don't know what's going to happen."

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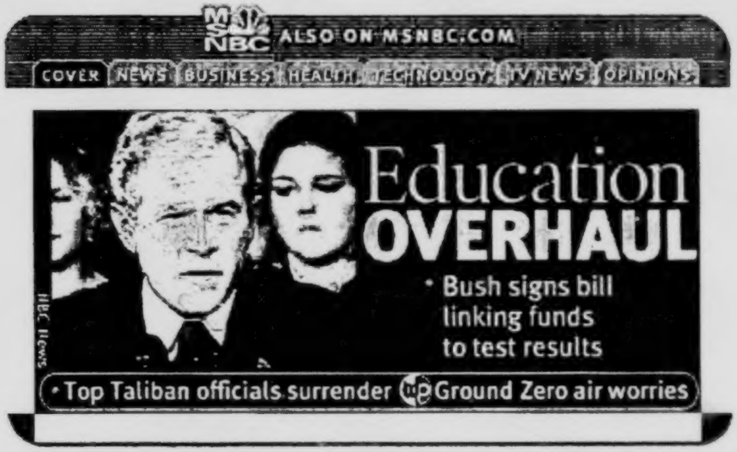
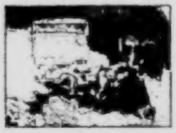


Education OVERHAUL

- Bush signs bill linking funds to test results

- Top Taliban officials surrender

Ground Zero air worries



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STORY U.S. begins setting up Cuba prison

# New York Committee for Occupational Safety and Health, Inc. Newsletter

NYCOSH UPDATE ON SAFETY AND HEALTH
Vol. VII, No. 1
Monday, January 14, 2002

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Bush Administration Takes the Axe to Safety and Health Regulations

Comings and Goings: Deborah Nagin, Mario Scarsaletta

Job opening: Associate Director, Hunter College Center for Occupational and Environmental Health

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As the World Trade Center Clean-Up Continues, Health Concerns Grow

Despite the passage of four months since the World Trade Center attack, public expressions of concern about potential health hazards resulting from the twin towers collapse are on the increase.

In response to long articles in the Wall Street Journal and the

Washington Post listing examples of unexplained sickness among workers and area residents, on January 9 the Inspector General of the Environmental Protection Agency opened an investigation of how EPA had responded to questions about air quality in the aftermath of the attack. "If the allegations reported in the Washington Post are true, EPA has done a disservice to the brave men and women working at 'ground zero' and to the citizens who live in the area whose health and environment we are required to protect,î Inspector General Robert Martin wrote in his first statement concerning the investigation. (For the complete text of news reports referred to in this article, please visit the NYCOSH websiteís World Trade Center catastrophe safety and health links page at http://www.nycosh.org/linktopics/WTC-catastrophe.html)

ìThe government agencies that are responsible for protecting the workers on and near the World Trade Center site, and everyone else who works, lives or studies in the vicinity, have all adopted the attitude that the hazards are either negligible or under control,î said NYCOSH Executive Director Joel Shufro. ìBut there is a great deal of evidence to the contrary. There is no such thing as ënegligibleí exposure to carcinogens such as asbestos, for which there is no safe level of exposure, a point that we have made repeatedly ever since September 11. It is obvious that workers and residents are being exposed to potential hazards that haven't even all been identified, let alone quantified. Those exposures may have grave adverse public health consequences, but we will not know exactly what those consequences are for decades.î

One sign that EPA monitoring missed dangerous environmental hazards came when it was reported that five police officers and a maintenance worker who were assigned to the area of the World Trade Center site were reassigned as a precaution because tests show that they have elevated levels of mercury in their blood. There is no definite information about the source of the workersí mercury exposure, but it is known that the rubble of the towers contains mercury, which can be inhaled or absorbed through the skin.

EPA and city health department officials have said monitoring has not disclosed the presence of mercury at hazardous levels, but observers were critical of the thoroughness of the official measurements. Don Carson, an official of the International Union of Operating Engineers, which represents hundreds of the workers engaged in the ground zero clean-up, said that the official air monitoring is "kind of helter-skelter right now."

A spokesman for the Port Authority of New York and New Jersey, which employs the six workers with elevated mercury levels, said "We can't say with any certainty that they were exposed during their work at Ground Zero, but it certainly is a reasonable possibility," he said. "As a precaution, we decided to take them out of that environment."

A likely source of mercury contamination at the site of the collapse is the tens of thousands of pulverized flourescent light bulbs, according to NYCOSH industrial hygienist Dave Newman, who points our that each bulb contained a ìminuscule quantity of mercury. In a structure the size of the World Trade Center, you multiply that by many hundreds of thousands of light bulbs, and you have potentially a significant source," he said.

Asbestos is another potential hazard that public health officials have consistently downplayed since the attack.  Asbestos is not known to cause immediate health effects, but it is present in more than half of the dust samples taken in the month after the attack, so any air that is contaminated with World Trade Center dust is likely to contain some asbestos.

After the attack EPA and the City Department of Health repeatedly stated that short-term exposure to asbestos is not a health concern.  ìAs far as we know,î said Shufro, ìthere is absolutely no scientific basis to distinguish the health effect of a high, short-term exposure to asbestos from a low, long-term exposure that results in the same total inhalation of asbestos.  The fact is that small exposures are safer than large exposures, but there is no known asbestos-exposure threshold below which it's possible to say there is no chance of any adverse health effect.î

Reassuring official statements about the low risk of asbestos exposure was sharply criticized in a front-page St.  Louis Post-Dispatch article January 13 headlined: ìAsbestos Risks Near Ground Zero May Be Far Greater Than Government Reports,î which reported ìFederal and state officials in New York have grossly underestimated or played down the number of people in lower Manhattan who are at risk of being sickened or killed from exposure to asbestos released in the collapse of the World Trade

Center. Evaluations of analyses done by teams of leading asbestos researchers show the increased risk of death to people who live, work or study in homes or offices that have not been properly decontaminated could be as high as one additional cancer death for every 10 people exposed.î

NYCOSH, in collaboration with the Latin American Workers Project and the Center for the Biology of Natural Systems of Queens College is initiating the WTC Medical Monitoring for Building Clean-Up Workers/Pruebas de Salud para Trabajadores de Limpienza de WTC. The project will operate a mobile medical monitoring unit on Broadway, near the World Trade Center site, for three weeks beginning on January 14.

The unit will provide medical examinations for building clean-up workers in the vicinity of the collapsed World Trade Center towers. Medical testing will focus on respiratory problems and other targeted health problems, as well as general physical exams.

The project was initiated in response to concerns about non-unionized day laborers and other workers performing clean-up tasks. Clean-up workers are particularly vulnerable to hazards arising from contact with toxic substances in the debris at Ground Zero, according to NYCOSH Director Shufro. ìMany day laborers are Spanish-speaking immigrants with little health and safety training,î he said. ìThe medical unit goes straight to the problem area, offering the basic medical and educational resources the clean-up crews need.î

ìWe are aiming to help the most neglected, least protected workers, who might otherwise receive no medical care for occupational health problems. As they cleaned, they stirred up and inhaled injurious dusts. We want to identify their illnesses and provide them with properly fitting respirators to protect themselves in the future,î said Steven Markowitz, MD, an occupational medicine physician who is directing the medical team from the City University of New York.

The unit will be open on weekdays between 8 am and 8 pm from January 14 to February 1, 2002, serving eligible participants by appointment. In addition to a free physical exam, medical and occupational histories, breathing test, urinalysis, complete blood count and blood chemistry panel, participants will also receive education, respirator fit-testing and a free half-mask respirator with HEPA filters.

For additional information about safety and health in the aftermath of the catastrophe at the World Trade Center, including dozens of safety and health fact sheets (two in Spanish) and reports and links to more than a hundred news reports, please visit the NYCOSH website at www.nycosh.org.

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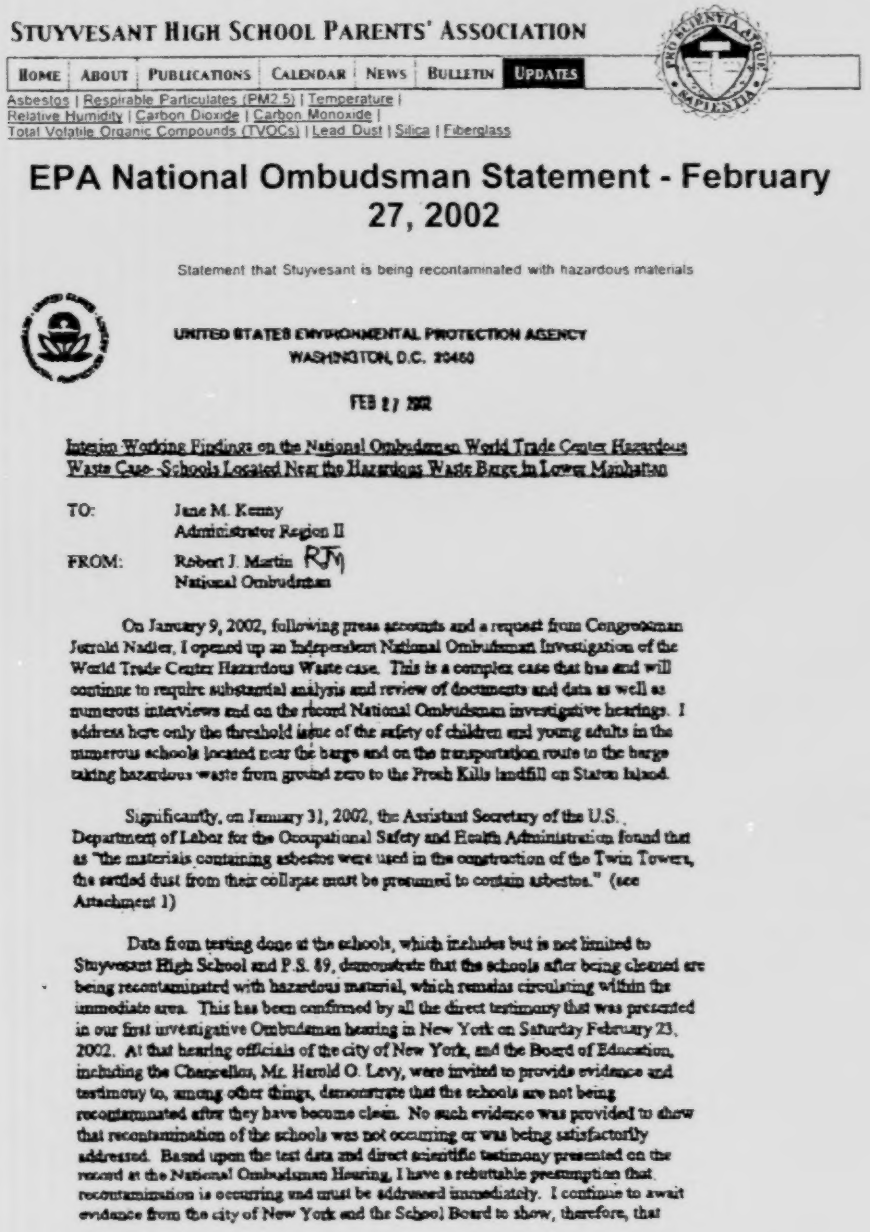
# U.S. Environmental Protection Agency Statements


STUYVESANT HIGH SCHOOL PARENTS' ASSOCIATION
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PUBLICATIONS
CALENDAR
NEWS
BULLETIN
UPDATES
Asbestos | Respirable Particulates (PM2.5) | Temperature |
Relative Humidity | Carbon Dioxide | Carbon Monoxide |
Total Volatile Organic Compounds (TVOCs) | Lead Dust | Silica | Fiberglass

## EPA National Ombudsman Statement - February 27, 2002

Statement that Stuyvesant is being recontaminated with hazardous materials

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 27 2002

Interim Working Findings on the National Ombudsman World Trade Center Hazardous Waste Case- Schools Located Near the Hazardous Waste Barge In Lower Manhattan

TO: Jane M. Kenny
Administrator Region II

FROM: Robert J. Martin RJM
National Ombudsman

On January 9, 2002, following press accounts and a request from Congressman Jerrold Nadler, I opened up an Independent National Ombudsman Investigation of the World Trade Center Hazardous Waste case. This is a complex case that has and will continue to require substantial analysis and review of documents and data as well as numerous interviews and on the record National Ombudsman investigative hearings. I address here only the threshold issue of the safety of children and young adults in the numerous schools located near the barge and on the transportation route to the barge taking hazardous waste from ground zero to the Fresh Kills landfill on Staten Island.

Significantly, on January 31, 2002, the Assistant Secretary of the U.S. Department of Labor for the Occupational Safety and Health Administration found that as "the materials containing asbestos were used in the construction of the Twin Towers, the settled dust from their collapse must be presumed to contain asbestos." (see Attachment 1)

Data from testing done at the schools, which includes but is not limited to Stuyvesant High School and P.S. 89, demonstrate that the schools after being cleaned are being recontaminated with hazardous material, which remains circulating within the immediate area. This has been confirmed by all the direct testimony that was presented in our first investigative Ombudsman hearing in New York on Saturday February 23, 2002. At that hearing officials of the city of New York, and the Board of Education, including the Chancellor, Mr. Harold O. Levy, were invited to provide evidence and testimony to, among other things, demonstrate that the schools are not being recontaminated after they have become clean. No such evidence was provided to show that recontamination of the schools was not occurring or was being satisfactorily addressed. Based upon the test data and direct scientific testimony presented on the record at the National Ombudsman Hearing, I have a rebuttable presumption that recontamination is occurring and must be addressed immediately. I continue to await evidence from the city of New York and the School Board to show, therefore, that recontamination is not occurring in the schools located in Lower Manhattan near the barge. This includes, but is not limited to, Stuyvesant High School, P.S. 89, P.S. 234, I.S. 89, P.S. 150, and BMCC.

I recommend that you exercise your authorities as Regional Administrator, therefore, to immediately perform and to seek the aid of the Federal Emergency Management Agency and the City of New York to perform any and all remedial actions to protect the public health and the environment of the children and young adults who are attending these schools. This could include evacuation of the schools, and/or removal of the barge, and/or continuous replacement and cleaning of the ductwork, and/or any other actions to assure the safety of the children during the barge operation. I would be grateful if you would communicate as soon as possible what actions you intend to take in view of the potential imminent and substantial hazard that endangers these school children and young adults.

Attachment 1 - January 11, 2002. John Henshaw, Assistant Administrator DOL-OSHA to Lowell Peterson.

cc: Congressman Jerrold Nadler
Senator Hillary Clinton
Senator Charles Schumer
Governor George Pataki
Mayor Michael Bloomberg
New York City Council
Chancellor New York City Board of Education Harold Levy
EPA Administrator Christine Todd Whitman
EPA Deputy Administrator Linda Fisher
EPA Assistant Administrator OSWER Marianne Lamont Horinko
EPA Principal Deputy Assistant Administrator OSWER Michael Shapiro

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Parents' Association
Stuyvesant High School
345 Chambers St., Room 271, New York, NY 10282
(212) 312-4838
email the PA

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 27 2002

## FINDINGS TO DATE, RECOMMENDATIONS TO DATE, AND SECOND ROUND OF INTERROGATORIES

TO: Jane M. Kenny
Administrator Region II

FROM: Robert J. Martin
National Ombudsman

SUBJECT: National Ombudsman World Trade Center Hazardous Waste Case

## BACKGROUND

On September 11, 2001, lower Manhattan was subjected to an unprecedented terrorist attack on American soil. Specifically, buildings in lower Manhattan including the twin World Trade Center towers were destroyed and thousand of tons of waste material, hazardous material, and hazardous waste including but not limited to asbestos, lead, mercury, cadmium, PCBs, benzene, chromium, etc. were dispersed into the environment of lower Manhattan. EPA has documented over the years that uncontrolled release of these quantities and types of hazardous materials into the environment poses an imminent and substantial threat to the public health and the environment. Evidence adduced in my hearings demonstrates that the Agency initiated the National Contingency Plan (NCP) by mobilizing EPA On-Scene Coordinators (OSCs) from all over the country to lower Manhattan to sample indoor and outdoor air, dust and water to, among other things, determine the levels of contamination.

Further, the United States Geological Survey (USGS) testified that the plume of contaminated dust from the attacks was highly caustic with pH readings at least as high as 12.1. A clear reading of the definition of hazardous waste under the Resource Conservation and Recovery Act (RCRA), leads to the reasonable conclusion that all of the material released from the attack may be a hazardous waste.

The Director of the Occupational Safety and Health Administration, has concluded that all dust from the World Trade Center attack must be presumed to be asbestos containing material (ACM). Thus any cleanup of this dust, should have been and must now be performed in full compliance with the OSHA regulations including but not limited to 29 CFR 1910 and 1926.

In the first National Ombudsman hearing on this case convened in New York City on February 23, 2002, Dr. Thomas Cahill provided expert testimony concerning the results of his air pollution testing in lower Manhattan a month after the attack one mile north of "ground zero" and 15 stories above ground level. Dr. Cahill heads the "DELTA Group" which is a group of scientists convened by the United States Department of Energy to monitor major air pollution incidents around the world. Dr. Cahill and the "DELTA Group" confirmed that the pollution from very fine particulates in the air was greater than the air pollution they had measured from the Kuwaiti oil field fires, set during the Gulf War.

Based upon the foregoing expert testimony I made a threshold recommendation on February 27, 2002 that EPA undertake remedial actions to protect the public health and environment of children and young adults who are attending schools in and around "ground zero." Following this recommendation, it was revealed that children and young adults were going to school with an inadequate filtration system in the school to protect the students' health and that lead re-contamination was occurring. Further, it was disclosed that children and young adults were let outside to play during school hours in direct violation of the Board of Education's instructions to keep the children and young adults inside to protect their health. See, Transcript, Second National Ombudsman Hearing. March 11, 2002.

Pending your deliberation of my threshold recommendation to protect the children in the schools, I note with grave concern that children remain exposed to contaminants. In order to aid your consideration of more specific recommendations relating to the schools, inter alia, I offer the ensuing Findings of Fact, which are reasonable inferences drawn from the expert and direct evidence provided at the National Ombudsman Hearings in New York City. I entrust these recommendations to you in the expectation that the abandonment of the citizens of New York City who have been and continue to be affected by the World Trade Center attack will be ended. EPA can and should provide the help which these people need and deserve.

## FINDINGS OF FACT

- Use of the EPA National Contingency Plan (NCP) and On-Scene Coordinators (OSCs)

One month before the terrorist attacks of September 11th, 2001, in August of 2001, the United States Office of Management and Budget issued an Annual Report to Congress on Combating Terrorism. This Report documented that EPA has a critical role in responding to hazardous materials emergencies and openly communicating investigative findings with those affected by a terrorist act. The report provides that EPA has "expertise in performing off-site monitoring, extent of contamination surveys, working with health officials to establish safe cleanup levels, conducting protective cleanup actions, and communicating technical information/data to impacted citizens is important for a successful Federal response to an act of terrorism that involves a release of chemical, biological, or radioactive material." Furthermore, the report notes that, "EPA's first responders (On-Scene Coordinators or OSCs) from all 10 regions have been actively involved with local, State, and Federal authorities in responding to threats of terrorism. See, OMB Report at Pg 48. **EPA's response to such threats is an extension of its existing hazardous materials response capability developed over more than 30 years as a leader of the National Response System** (emphasis supplied)."

EPA has neither fully used its legal authorities nor its existing hazardous materials response capabilities as a leader of the National Response System to aid the victims of the terrorist attack (apartment residents, school children, rescue workers, building owners, etc.). During the last thirty years as a leader of the National Response System, EPA has used the National Contingency Plan as a framework to perform indoor air testing and remediation where there have been releases of hazardous material into homes, schools, and/or offices throughout the United States. EPA has not undertaken such activities, however, in response to the terrorist attack of September 11th in New York City.

- Two EPA On-Scene Coordinators were involved in the decision of Oct 9th, 2001 to re-open Stuyvesant High School in lower Manhattan based on indoor air samples taken by EPA at the school. Further these two EPA On Scene-Coordinators were present at an Oct. 9th, 2001 meeting and an Oct. 5th, 2001 meeting with all stakeholders where the decision to re-open the school was made.

Presumably, the On-Scene Coordinators involvement in taking indoor air samples and participation in the decision-making around school re-open demonstrates that at least up until October 9th, EPA was executing authorities under the National Contingency Plan in response to the terrorist attack and consistent with the procedures expressed in the OMB narrative.

In the National Ombudsman hearing of March 11th, the Director of the New York City Board of Education Environment and Safety Division testified that one of the EPA On-Scene Coordinators (OSCs), Charlie Fitzsimmons, was present at both aforementioned meetings and stated that EPA had sampled for hazardous material and all EPA test results were at "acceptable levels" but they have not shared the results with us. This testimony is confirmed by sign-in sheets at the October 9th, 2001 meeting with the school board and other stakeholders.

This does not comport with the statement provided by OSC Fitzsimmons' Supervisor, Doug Lair, to me in writing on March 11th 2002 remarking that OSC Fitzsimmons had spent only "two weeks in New York City in September" and that "he has minimal knowledge of the World Trade Center response activities conducted beyond the two weeks he spent there." Given Mr. Fitzsimmons' documented participation in decision-making around the reopening of the Stuyvesant School in October 2001, Mr. Lair's written statement to me lacks credibility.

- **Indoor Air Testing and Remediation–Presidential Directive PDD 62**

EPA has and is presently communicating that they are **not responsible** for indoor air testing and remediation as a result of the contamination created by the World Trade Center terrorist attack. Notwithstanding these statements, Administrator Christine Todd Whitman's testimony to the Senate Appropriations Subcommittee on VA, HUD and Independent Agencies on November 28, 2001directly conflicts with EPA's policy to date in response to the World Trade Center terrorist attack. Specifically, Administrator Whitman told Congress, "Under the provisions of PDD 62, signed by President Clinton in 1998, the EPA is assigned lead responsibility for **cleaning up buildings** and other sites contaminated by **chemical** or biological agents as a result of an act of terrorism (emphasis supplied). This responsibility draws on our decades of experience in cleaning up sites contaminated by toxins through prior practices or accidents."

Moreover, four (4) days before the terrorist attack on the World Trade Center, on September 7th, 2001 in a town meeting in Libby, Montana (another city contaminated from the uncontrolled release of asbestos) Administrator Whitman stated, "it has never been our plan to look to you to pay for any part of this cleanup, including the cleanup of residential properties." Administrator Whitman further went on to say that EPA is taking a "legal step to protect you from future liability, whether or not we end up listing Libby on the NPL. We will be providing home owners with legal guarantees–called 'A No Action Assurance'– that will protect them from EPA's ever seeking to have them assume the cost of cleanup. Similarly, local businesses in Libby that did not know about the hazards... will also receive this guarantee." After the terrorist attack on New York City, EPA in carrying out its responsibilities, however, has declined to remove the burden and responsibility for cleaning up buildings contaminated from the affected individual building owners, residents, office workers, and school system. The magnitude of this burden is immense as are the corresponding risks of imminent and substantial hazards faced by the public.

- **EPA has not fully discharged its duties under PDD (Presidential Directive) 62, the National Contingency Plan (NCP), and the 2001 OMB Annual Report to Congress on Combating Terrorism. EPA has abandoned its responsibilities for cleaning up buildings (both inside and out) that are contaminated, or that are being re-contaminated, as a result of the uncontrolled chemical releases from the World Trade Center terrorist attack.**

- **Stuyvesant High School Remediation**

In the first and second National Ombudsman hearings on the World Trade Center hazardous waste case it was noted that Stuyvesant High School was being re-contaminated by hazardous materials. On February 22nd, 2002, after a detailed assessment of environmental data, Dr. David O. Carpenter from the School of Public Health at the University of Albany concluded that the Stuyvesant "building has not yet been proven safe." On February 28th, 2002 New York City School Board member Irving Hamer Jr. recommended cleaning of the air ducts in Stuyvesant High School during spring break beginning March 28th, 2002. The Ombudsman hearing documented the fact that upgrading of the ventilation systems and installing high efficiency filtration at the Stuyvesant High School to accommodate 90-95% minium efficiency filters would reduce the risk to the children from the hazardous materials created by the World Trade Center terrorist attack.

## RECOMMENDATIONS

*Recommendation #1*

**EPA Region II should, pursuant to authorities under Presidential Directive PDD 62, and the National Contingency Plan (NCP) immediately clean the ducts and upgrade the ventilation systems to install high efficiency filtration at the Stuyvesant High School during spring break.**

*Recommendation #2*

**EPA Region II should execute authorities under Presidential Directive PDD 62, the National Contingency Plan (NCP), and consistent with Administrator Whitman's statement in Libby, Montana four days before the World Trade Center terrorist attack, issue legal guarantees to all building owners, building managers, local businesses, the New York City Board of Education, and condominium and coop owners to protect them from assuming the costs of cleanup from the terrorist attack on the World Trade Center.**

*Recommendation #3*

**Consistent with Presidential Directive PDD 62, the National Contingency Plan (NCP), and Administrator Whitman's statement in Libby, Montana four days before the World Trade Center terrorist attack, EPA Region II should cleanup all buildings impacted by the World Trade Center terrorist attack together with corresponding remediation at "ground zero."**

## INTERROGATORIES

1. Please identify any and all individuals who were involved in the decision not to fully execute the authorities under Presidential Directive PDD 62 as it related to EPA's actions to remediate the effects of the chemical contamination in lower Manhattan from the World Trade Center terrorist attack.

2. When was this decision made?

3. Who made the decision to send back home the On-Scene Coordinators from around the country who presumably were carrying out the provisions of the National Contingency Plan (NCP) and Presidential Directive PDD 62?

4. When was this decision made? When was this decision implemented?

5. When did EPA Region II first become aware of the results of the United States Geological Survey (USGS) assessment of the pH level of the air and dust in lower Manhattan performed in September of 2001 after the World Trade Center terrorist attack?

6. When was this information provided to the public and in what form?

## RESPONSE

I would be grateful if you would respond via telefax and U.S. Mail by close of business Wednesday April 3, 2002 to:

Robert J. Martin, National Ombudsman
Room 3109-Waterside Mall
Mailstop 5101
US EPA
Washington, DC 20460

telefax number: 202-401-1740

cc: Congressman Jerrold Nadler
Senator Hillary Clinton
Senator Charles Schumer
Governor George Pataki
Mayor Michael Bloomberg
New York City Council
Chancellor New York City Board of Education Harold Levy
EPA Administrator Christine Todd Whitman
EPA Deputy Administrator Linda Fisher
EPA Assistant Administrator OSWER Marianne Lamont Horinko
EPA Principal Deputy Assistant Administrator OSWER Michael Shapiro
Hugh B. Kaufman

# Parent Association (or PTA) Communications—P.S. 234

**HOW 234 PARENTS CAN HELP AT ST. BERNARD'S** page 2

Now that we're settled in St. Bernard's, we need help making things work. These are the needs identified so far:

**Lunchtime Help** - We have a crossing guard to stop traffic for kids to cross to the park, but we need parents, too. The time is 11:30-12:30 for grades 2-5 and 12:35-1:35 for the K-1s. Just show up if you're available.

**Correspondence** - We need a few people to help sort letters of support from all over the country (especially children's letters) and to send thank you notes. See Anna if you can do this.

**Questionnaire**: Parents please fill out the questionnaire that Bruce Arnold sent home last week and return it to the school as soon as possible.

**Immediate Needs** - The children's counseling room is rather industrial at present. We're looking for shelves a window treatment, a rug and some colorful soft chairs. Contact the Family Support Committee if you can help with this. The after school clubs need chess sets, basket balls, and a convection oven. Anna has asked if anyone knows of a source who can either donate the funds or donate a Projection Television (estimate $2,000.00) for all the rainy and cold recesses that are coming up. A complete wish list is being compiled and it will be posted on the PS234.org website ("how to help")

**Service Volunteers**: Annie Luce is compiling the "wish list" from teachers. Once this is complete we will need parents who can write letters to companies and corporate donorssoliciting donations.

**Volunteers to Conduct Housing Searches**: (telephone and internet)

**Neighborhood Liaisons**: Information regarding new building re-openings and opened access to parts of the "Frozen Zone", referrals for affordable professional environmental specialist cleaners

**Parent Communications**: There are two Bulletin Boards on the Mezzanine level of St. Bernard's by Dana's Art Classroom. Family Support Materials (Health, Counseling, News, Building and Neighborhood Updates, Public Forums) will be posted on the green board, the bright blue board is for Parent Communications (Apartment listings, "car pools," play groups, meetings, concerts or events, things to donate, baby-sitters, teacher or parent needs/wish list, apartment listings, queries, or information that would be helpful to other parents). Please feel free to post materials or queries on either board.

**Federal Assistance**:
F.E.M.A. is not only offering assistance to dislocated families, if you were a witness to the attack on the World Trade Center, if you were in the area and experienced the collapse of either of the towers you have 60 days (from the date of September 11th) to register with F.E.M.A.. In addition to the emergency funds being released by the Federal Government, monies will be made available for counseling costs to those who have registered with F.E.M.A. by Sunday, November 11th. Registering with F.E.M.A can be done over the phone: 1 800 462 9029

**Insurance**: The National Insurance Institute said that the major insurance companies had agreed to cover those affected by the terrorism (on planes, in buildings, etc.) as they would cover those affected by a natural disaster. For information: (800) 942-4242.

# December 14, 2001 list of protocols delivered to David Klasfeld and Burton Sacks of the NYC Board of Education from the PTA of PS 234.

The agreement with the BOE is that our return date to 234 will be February 1 2001 provided that the following protocols are in place.

1. The modifications to the air filtration system agreed to between our mechanical engineer and the BOE's mechanical consultants are accomplished and the system is fully operational;

2. The interior air quality tests taken subsequent to the installation of the filtration modifications are satisfactory;

3. The outside air quality tests are all satisfactory;

4. A full time school custodian is assigned to 234;

5. The school intercom system is repaired and fully operational;

6. One additional school crossing guard is at the school during the morning hours at least for the first month of our return;

7. Four new vacuum cleaners with HEPA type filters for the hallways and classrooms are provided;

8. One additional school safety officer is assigned to the school with special emphasis to keep any possible tourists or press away from the schoolyard;

9. Permit access for the PTA to remove and replace the carpeting in the library and classrooms;

10. Hire professional movers for our move back to 234;

11. Change all the locks on the exterior doors; and

12. Continue to keep our professionals involved in all of the foregoing protocols.

DRAFT

## AMBIENT AIR AND DUST SAMPLING PROTOCOL

## FOR

## P.S.234 MANHATTAN

The New York City Board of Education (BOE) in an effort to address concerns regarding Indoor Air Quality (IAQ) and potential asbestos contamination of the ambient air at Stuyvesant High School following the World Trade Center (WTC) tragedy and associated clean up work had established the following IAQ and ambient air monitoring/assessment protocol:

### ASBESTOS

To address the concerns regarding the potential of asbestos contamination of the ambient air, daily air testing and analysis shall be performed, including Saturdays and Sundays, inside and outside the school building as follows:

#### Inside the school building

The total of 8 ambient air samples shall be collected from inside the school building each day as follows:

- First floor hallway – 2 samples (one sample from 8am-12pm & one from 12pm-4pm)
- Cafeteria – one sample during the school day
- Gymnasium – one sample during the school day
- Auditorium – one sample during the school day
- Two Classrooms facing south – 2 samples (one sample in each randomly selected classroom immediately after the last class)
- Classroom facing east – one sample in a randomly selected classroom immediately after the last class

#### Outside the school building

The total of 6 ambient air samples shall be collected from outside the school building each day as follows:

- North side playground– 2 samples (one sample from 8am-12pm & one from 12pm-4pm)
- West side playground– 2 samples (one sample from 8am-12pm & one from 12pm-4pm)
- Roof – 2 samples (one sample from 8am-12pm & one from 12pm-4pm)

The duration of all ambient air sample shall be approximately 4 hours. The total air volume sampled at each location shall be approximately 1800 liters.

All ambient air samples collected shall be analyzed via Transmission Electron Microscopy (TEM) in accordance with the methodology of the AHERA Final Rule.

Results from samples collected each day shall be reported verbally, no later than 8am the next day, to BOE, UFT, School Principal and the PA consultant. A written report shall be delivered or faxed by the end of the day. Unsatisfactory results (>70 s/mm$^2$) shall be reported immediately.

In the event that any one sample result exceed 70 s/mm$^2$ BOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

## INDOOR AIR QUALITY

To address IAQ concerns, each day from Monday through Friday, the following shall be performed:

- A visual inspection to assess conditions present in the school at the time of the site visit.
- Collect approximately 60 real-time environmental measurements of temperature (T)
- Collect approximately 60 real-time environmental measurements of relative humidity (RH)
- Collect approximately 60 real-time environmental measurements of carbon dioxide ($CO_2$)
- Collect approximately 60 real-time environmental measurements of carbon monoxide (CO)
- Collect approximately 60 real-time environmental measurements of total volatile organic compounds (TVOCs)
- Collect approximately 60 real-time environmental measurements of respirable particulates (PM2.5).

### *EVALUATION CRITERIA:*

Since, there are no regulatory standards for indoor air quality in non-industrial buildings, such as offices and schools at this time, for the real-time data collected, the commonly accepted guidelines cited in the following publications and table below shall be utilized:

- *Ventilation for Acceptable Indoor Air Quality (ASHRAE 62-1999)*, American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE);
- *Thermal Environmental Conditions for Human Occupancy (ASHRAE 55-1992);*

- *Industrial Hygienists Guide to Indoor Air Quality Investigations*(1993), American Industrial Hygiene Association (AIHA).

## TARGET GUIDELINES FOR INDOOR AIR QUALITY PARAMETERS EVALUATED

| PARAMETER | TARGET LEVEL | AGENCY OR ORGANIZATION |
|---|---|---|
| Temperature (T) | Summer: 73-79°F at 50% RH<br>Winter: 68-75°F at 50% RH | ASHRAE 55 |
| Relative Humidity (RH) | 30 – 60 % | ASHRAE 55 |
| Carbon Dioxide ($CO_2$) | <700 parts per million (ppm) above background level | ASHRAE 62 |
| Carbon Monoxide (CO) | 9 ppm | USEPA NPAAQS (as cited in ASHRAE 62) |
| Total Volatile Organic Compounds (TVOC) | 1 ppm | AIHA |
| Respirable Particulates ($PM_{2.5}$) | 65 micrograms per cubic meter of air ($\mu g/m^3$) | USEPA NPAAQS |

USEPA = United States Environmental Protection Agency
NPAAQS = National Primary Ambient-Air Quality Standard
AIHA = American Industrial Hygiene Association
ASHRAE = American Society of Heating, Refrigerating, and Air-Conditioning Engineers

Results from samples collected each day shall be reported verbally, no later than 8am the next day, to BOE, UFT, School Principal and the PA consultant. A written report shall be delivered or faxed by the end of the day.

In the event that real-time measurements of Temperature, Relative Humidity, and/or $CO_2$ exceed the cited Target Guidelines, the following actions are to be taken:

1. Building engineering controls shall be adjusted and/or implemented to improve conditions.

In the event, that real-time measurements of respirable particulates exceed the cited Target Guidelines, BOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

In the event, that CO inside the school measured above the cited Target Guidelines (9ppm), BOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

In the event that real-time measurement(s) of CO inside the school is/are greater than 5ppm and less than 9ppm, BOE will identify the source and assess the situation.

In the event that real-time measurement(s) of TVOC inside the school is/are above the cited Target Guidelines (1ppm), BOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

In the event that real-time measurement(s) of 0.5 ppm of TVOC are obtained inside the school BOE will notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s)

## ADDITIONAL TESTING

In addition to the above, once per week, preferably on Tuesday, sampling settled dust for fiberglass, lead, and silica; wipe sampling for dioxin and PCB and air sampling, for heavy metals, and TVOCs shall be performed as follows:

### SETTLED FIBERGLASS

- First floor hallway – one sample.
- Cafeteria – one sample.
- Gymnasium – one sample.
- Auditorium – one sample.
- Two Classrooms facing south – 2 samples (one sample in each randomly selected classroom immediately after the last class)
- Classroom facing east – one sample in a randomly selected classroom immediately after the last class.

Dust bulk samples will be collected at the aforementioned locations and analyzed via Polarized Light Microscopy (PLM). In the event that in any of the above locations there is not sufficient amount of dust for bulk sampling and/or analysis will be noted as Not Sufficient Amount of Material for Testing (NSAMT)

In the event that any of PLM analysisdetect more than 1% by weight of fiberglass, BOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

### LEAD SURFACE DUST

- First floor hallway – one sample.
- Cafeteria – one sample.
- Gymnasium – one sample.
- Auditorium – one sample.

- Two Classrooms facing south – 2 samples (one sample in each randomly selected classroom immediately after the last class)
- Classroom facing east – one sample in a randomly selected classroom immediately after the last class.

All dust wipe samples taken shall be analyzed in accordance with EPA7082 method via Flame Atomic Absorption (FAA).

Dust wipe results shall be considered satisfactory when the levels obtained are below the EPA new levels for clearing a work area for re-occupancy after an EPA defined lead abatement is performed, as specified in 40 CFR §745.227(e)(8)(viii).

| | |
|---|---|
| Floors: | 40 micrograms of lead per square foot |
| Window Sills: | 250 micrograms of lead per square foot |

Dust wipe results shall be considered unsatisfactory when the levels obtained are greater than the EPA new levels for clearing a work area for re-occupancy after an EPA defined lead abatement is performed, as specified in 40 CFR §745.227(e)(8)(viii).

| | |
|---|---|
| Floors: | 40 micrograms of lead per square foot |
| Window Sills: | 250 micrograms of lead per square foot |

Results from samples collected shall be reported to BOE, UFT, School Principal and the PA consultant within 24 hours.

In the event that unsatisfactory results are obtained, the following actions are to be implemented:

1. Perform general dust clean up of all areas/classrooms with unsatisfactory results.
2. Lead specific cleaner shall be utilized.
3. Re-test said areas following clean up.
4. Floor mats and/or other dust control devises shall be placed at points of entry.

Actions 1,2 and 3 shall be repeated until satisfactory results are obtained.

**SILICA**

- First floor hallway – one sample.
- Cafeteria – one sample.
- Gymnasium – one sample.
- Auditorium – one sample.

- Two Classrooms facing south – 2 samples (one sample in each randomly selected classroom immediately after the last class)
- Classroom facing east – one sample in a randomly selected classroom immediately after the last class.

All sample collected shall be analyzed utilizing the NIOSH 7500 method for respirable silica.

Since, there are no regulatory standards for Mineral Dust in non-industrial buildings, such as offices and schools at this time, the OSHA standard 1910.1000 TABLE Z-3 shall be utilized (per the request of PA consultant).

Results from samples collected shall be reported to BOE, UFT, School Principal and the PA consultant within 72 hours from the collection day.

In the event that unsatisfactory results are obtained, the following actions are to be implemented:

1. Perform general dust clean up of all areas/classrooms with unsatisfactory results.
2. Re-test said areas following clean up.
3. Floor mats and/or other dust control devises shall be placed at points of entry.

Actions 1,2 shall be repeated until satisfactory results are obtained.

## DIOXIN WIPE SAMPLES

- First floor hallway ,east end, near main entrance – one sample
- First floor hallway west end, near west playground exit – one sample

All sample collected shall be analyzed utilizing the EPA 8290 PCDD/DF Dioxin Furan method.

Results from samples collected shall be reported to BOE, UFT, School Principal and the PA consultant in 15 business days from the day of sampling.

In the event that any one sample result is unsatisfactory BOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

## PCB WIPE SAMPLES

- First floor hallway ,east end, near main entrance – one sample
- First floor hallway west end, near west playground exit – one sample

All sample collected shall be analyzed utilizing the EPA 8081 method.

Results from samples collected shall be reported to BOE, UFT, School Principal and the PA consultant in 4 days from the day of sampling.

In the event that any one sample result is unsatisfactory BOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

## HEAVY METAL AIR SAMPLES

- Roof – one sample
- First Floor lobby near main entrance– one sample
- First Floor hallway – one sample

All sample collected shall be analyzed utilizing NIOSH 7300 method for Al,Cd, Cr, Co, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Zn and NIOSH 6009 method for Hg.

Results from samples collected shall be reported to BOE, UFT, School Principal and the PA consultant in 4 days from the day of sampling.

In the event that any one sample result is unsatisfactoryBOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

## TVOCs AIR SAMPLES

- Roof – one sample
- First Floor lobby near main entrance– one sample
- First Floor hallway – one sample

All sample collected shall be analyzed utilizing Hydrocarbon Scan (16+A&B) OSHA 7 method.

Results from samples collected shall be reported to BOE, UFT, School Principal and the PA consultant in 4 days from the day of sampling.

In the event that any one sample result is unsatisfactoryBOE will immediately notify the UFT, the school principal, the school custodian and the PA consultant. The said parties will assess the situation and implement the appropriate response action(s).

**NOTE: Please note that this protocol established to address the environmental concerns due to the WTC tragedy. Therefore, this document will be constantly reviewed and modified as the environmental conditions in Lower Manhattan are changing.**

ENVIRON

October 26, 2001

MEMORANDUM

To: Ahsan Farooqi

From: Thomas Fusillo
Jeffrey Entin

Subject: Summary of PS 234 Outdoor Issues

During a visit to the PS 234 site by ENVIRON representatives on Thursday, October 18, observations were made concerning the status of the school cleanup in certain areas following the events of September 11. During ENVIRON's second visit to the site on October 22, 2001, these areas were identified and brought to the attention of New York Board of Education representative Bernard Orlan, Construction official Alex Lampert, and several Board of Education contractors' representatives. For each item, ENVIRON's suggested mitigation measures follow.

The following is not intended to be a comprehensive list of issues or concerns but merely identifies cleanup items that appear unfinished. ENVIRON's suggestions shall not be construed as contractor specifications. All work should be performed in accordance with applicable laws, regulations and permits:

Roof
An accumulation of dust and debris (including visible fiberglass insulation and small pieces of wallboard) was observed between and beneath the layer of stone across the entire school roof. This dust and debris is of the same appearance as the dust and debris that covered the area after September 11 and more than likely contains asbestos. The dust was extremely dry and friable and would be easily entrained in the roof air intakes or blown off the roof into the play areas during windy conditions. The dust is also in proximity to roof drains, suggesting the potential to impact surface waters. While there has been significant removal of debris from the roof, it is evident that the roof cleanup is incomplete.

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ENVIRON was advised that the cleanup of the roof consisted of physical removal of larger debris, surficial vacuuming, and power washing. ENVIRON speculates that the power washing may have resulted in the dust and debris being distributed below and between the roofing stones. While the actual procedure the contractor may use to mitigate this concern remains to be determined, all dust and debris should be removed from the roof by use of a HEPA vacuum system or another appropriate procedure. The school's HVAC system should be shut down during this operation, air intakes should be physically blocked off, and all windows should remain closed. The operation should be conducted on a day with little or no wind. Power washing should not be performed unless and until the entire roof has been vacuumed. Regardless of the method used to clean the roof, great care should be taken by the contractor to avoid causing damage to the roofing membranes. The side and front play areas and sidewalk should be vacuumed using a HEPA unit and power washed following the operation.

Air Intakes and Air Handling System

ENVIRON observed that at least one aluminum box filters in one of the air handling units contained gray and white material that apparently could not be removed via steam cleaning. This material bore a resemblance to the dust and debris identified on the roof. A pile of aluminum box filters that had been stored outside on the roof on September 11 and reportedly steam-cleaned were also observed inside the air handling room. Several of these filters were caked with gray and white debris. ENVIRON was advised that the filters could not be cleaned.

It was discussed and agreed verbally during the site visit that all dirty filters that could not be adequately cleaned would not be reused and would instead be disposed.

It should be noted that the adequacy of the existing air filtration system is questionable in its ability to address pollutants emanating from Ground Zero. It is not the purpose of the above statement to address these potential concerns, which may be raised in a separate forum.

Front Outdoor Courtyard:

Surficial debris was observed on weeds and on the soil surface within each of the earthen cutouts along Chambers Street adjacent to the iron fence, and around the large tree.

Mitigation: At each earthen area, surficial dust and debris and approximately 2-3" of soil should be removed until no visible debris is observed. Proper wetting, handling and disposal techniques should be followed. The areas should be restored to the prior grade using topsoil and mulch in accordance with landscaping policies. Established garden plants or root systems should not be destroyed.

West Side Outdoor Courtyard and Playground:

Surficial debris was observed on the soil surface within the large earthen patio cutout on the west side of the play area. Additionally, debris apparently associated with the events of September 11 was observed in between the pull-out rubber mats beneath the playground area.

Mitigation: At each earthen area, surficial dust and debris and approximately 2-3" of soil should be removed until no visible debris is observed. Proper wetting, handling and disposal techniques should be followed. The areas should be restored to the prior grade using topsoil and mulch in accordance with landscaping policies. Established garden plants or root systems should not be destroyed.

Each of the square rubber pads should be removed and all dusts and debris from between the pads should be removed and disposed. Residual debris that falls below the mats should be removed or HEPA vacuumed and disposed. Mats should be power washed prior to being put back in place.

East Side Community Garden

Surficial dust and debris was observed on soil surfaces at the community garden outside the eastern entrance to the school.

Mitigation: At each earthen area, surficial dust and debris and approximately 2-3" of soil should be removed until no visible debris is observed. Proper wetting, handling and disposal techniques should be followed. The areas should be restored to the prior grade using topsoil and mulch in accordance with landscaping policies. Established garden plants or root systems should not be destroyed.

ENVIRON

Via E-mail

November 12, 2001

• Mr. Ahsan Z. Farooqi
Parent-Teachers Association
Public School 234
292 Greenwich St
New York, NY 10007-1081

Re: Report to Public School 234 Parent-Teachers Association

Dear Mr. Farooqi:

The purpose of this letter is to provide the P.S. 234 Parent-Teacher Association with the results of ENVIRON's initial evaluation of environmental data from the area of P.S. 234 and to provide recommendations concerning additional monitoring to further assess conditions in and around the school. As part of its evaluation, ENVIRON has attended a meeting on October 18, 2001 with representatives of the New York City Board of Education (BOE) to be briefed on the cleanup and monitoring activities conducted by the BOE and to conduct an inspection of the school. ENVIRON has also attended a meeting with the parents of P.S. 234 and a follow-up site inspection on October 22, 2001 with representatives of the BOE and School Construction Administration. During that meeting, there were discussions concerning additional cleanup of dusts and debris on the roof, and surficial dust and debris in the front outdoor courtyard, the west side outdoor courtyard and playground, and similar the community garden on the eastern side of the school. In addition, there were discussions regarding the condition of filters used in the air intakes and air handling system.

Following the October 22 meeting, ENVIRON prepared a memorandum dated October 26, 2001 identifying ENVIRON's recommendations for further cleanup of the school exterior, including the roof, play areas, and soils in landscaped and garden areas around the school. A copy of ENVIRON's October 26, 2001 memorandum is attached. Subsequent to the issuance of that memorandum, ENVIRON received the results of additional sampling conducted for the BOE from debris on the

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roof, playground areas, and various soils around the school. The results of that sampling showed that one debris sample from the roof was determined to be an asbestos-containing material (greater than 1% asbestos), and many of the other samples collected from the roof, play areas, and soil areas around the school were found to contain asbestos at levels from trace to just below 1%. Based on these sampling results, ENVIRON reiterates its recommendations made in the October 26, 2001 memorandum for further cleanup of these areas.

Without question, there are environmental, health and safety matters that require consideration as a prerequisite to any decision to reopen P.S. 234, including:

- Unpredictable and uncontrollable fires and chemical releases continue to occur at Ground Zero. Smoldering fires are causing significant and documented releases of hazardous substances. There is little data currently available in the vicinity of the school to assess the potential impacts from these releases on the school.

- There are continuing odor issues in Tribeca and the vicinity of the school, the extent of which are largely influenced by weather conditions. The existing school HVAC system appears to have little ability to control odor problems should they persist in the area of the school.

- There are unknowns regarding future conditions at and releases from activities at Ground Zero, including fires, releases related to on-going and planned building demolition activities, etc.

- The school is adjacent to the transportation corridor for vehicles transporting debris to the barge slip. While the trucks are cleaned before leaving Ground Zero, releases of dust from these trucks are unavoidable as they drive from Ground Zero to the barge slip, just north of Chambers Street. There is also continuing settling of dust throughout the area.

In the meeting on October 18, the BOE indicated that it will implement a technically appropriate and comprehensive sampling program at the P.S. 234 school facilities that would provide necessary data and support for the decision-making process for re-opening the school. The BOE also indicated that input would be welcomed from the PTA in developing that plan. While the nature of the plan was discussed briefly with the BOE at the October 18 meeting, we believe this plan needs to address several issues, including but not limited to:

- the adequacy of cleanup activities at the school and the current cleanliness of the school facility
- the adequacy of prior air monitoring at and around the school
- the existing air quality outside and inside the school, including the variability of that air quality
- potential risks posed by current indoor and outdoor air quality and potential future air quality to building occupants
- the extent of monitoring to be performed once the school is reopened
- the criteria to be used to evaluate the monitoring data
- a contingency plan to address potentially unacceptable monitoring results.

This letter includes a proposed sampling program to help begin to answer the above questions.

Assessment of Previous Air Quality Data

Extensive air quality data have been collected by the United States Environmental Protection Agency ("USEPA") and others at and around Ground Zero since September 11, although relatively little data has been collected in the immediate area of P.S. 234. An understanding of this existing data is needed in order for any future testing or monitoring at P.S. 234 to have meaning. It should be noted that the USEPA has not yet completed a quality assurance review of its data and, therefore, the USEPA data is subject to change.

ENVIRON has reviewed monitoring data obtained by the USEPA and others from in and around Ground Zero. Monitoring data include instrument readings (carbon monoxide [CO], hydrogen sulfide [H2S], sulfur dioxide [SO2], and nitrogen oxides [NOx]), acid gases, asbestos, particulates (less than 10 um and less than 2.5 um in size), PCBs, dioxins, metals, and volatile organic compounds. USEPA has stated publicly that airborne levels of hazardous substances within and adjacent to Ground Zero and within the smoke plumes have at times exceeded occupational risk-based exposure criteria relied upon by the Occupational Safety and Health Administration (OSHA) and the USEPA. The USEPA and OSHA have made comparisons to permissible exposure levels ("PELs"), which are appropriate in the case of exposure by certain workers at or around Ground Zero. However, OSHA standards may not be appropriate for application to a non-occupational school environment populated by school children and faculty.

As a first step toward understanding the scope of the air contaminant concerns around Ground Zero, ENVIRON believes that it is appropriate to compare the Ground Zero data to alternate exposure criteria developed by the USEPA for exposure by the general population. ENVIRON has initially approached this problem by comparing the Ground Zero air data to non-occupational USEPA screening levels. These screening levels are called Preliminary Remediation Goals, or "PRGs". PRGs for ambient air were developed by USEPA Region 9 for residential exposures, and in ENVIRON's experience, have also been utilized by USEPA Region 2, the region that covers New York. PRGs for ambient air assume chronic inhalation exposure to environmental contaminants. For cancer risk, the PRGs represent exposure to a particular contaminant over a 30-year period at a risk of 1 cancer in one million ($10^{-6}$). PRGs based on carcinogenic effects can be theoretically interpolated to represent a shorter time frame that would be more applicable to a school year scenario. ENVIRON also compared the air data to the American Industrial Hygiene Association's ERPGs (Emergency Response Planning Guidelines) which provide three levels of threshold values for exposures of a much shorter duration (1 hour).

Our preliminary review of the data indicates the maximum measured concentration of a significant number of constituents in the air at Ground Zero exceeds the PRGs for air, including organic compounds (particularly benzene, 1,3-butadiene, chloroform, 1,2-dichloroethane, and 1,3,5-trimethylbenzene), metals (e.g., arsenic and cadmium), PCBs, and dioxins (as 2,3,7,8-TCDD toxic equivalency values, or TEQs) . Maximum detected constituent concentrations of benzene, benzyl chloride, and vinyl acetate also exceed Level 1 ERPGs, representing potentially acute health risks to individuals at or near Ground Zero. Maximum detected constituent concentrations of benzene and benzyl chloride at Ground Zero exceed 1/10 of the IDLH (Immediately Dangerous to Life and Health) concentration. The maximum detected concentration of benzene at Ground Zero is five order of magnitude higher than USEPA's PRG for ambient air. Based on these results, the USEPA has recommended that workers at Ground Zero utilize respiratory protection.

Although these elevated levels of airborne contaminants have been detected at Ground Zero, sampling conducted two blocks or further from Ground Zero has typically shown significantly lower, and in most cases, largely non-detectable levels of the same constituents. However, little or no air quality data has been collected by EPA in the vicinity of P.S. 234 for any contaminants except asbestos. Data from nearby sampling locations can provide an indication of the likelihood of impacts to a facility several blocks from Ground Zero, but the migration of airborne contaminants is highly variable, depending upon wind speed and direction, cloud cover, air temperature, atmospheric pressure, etc. There is currently no data available to evaluate whether mixing, diffusion and dispersion of the contaminants over the distance from Ground Zero to the school would result in contaminant concentrations in air below PRG levels at the P.S. 234 location, and how that would be affected by weather conditions. This review is also complicated by the fact that air quality conditions in the neighborhood may result in exposure to constituents in air that may be more or less than exposures to ambient constituents at the school. Therefore, it is appropriate to take a conservative approach at this time

## Proposed Monitoring and Testing Program

At the October 18 meeting, the BOE agreed to consider and implement a technically appropriate and sufficiently comprehensive sampling program at the P.S. 234 school facilities that would provide necessary data and support for the decision-making process for reopenng the school. The BOE provided ENVIRON with its draft monitoring and testing plan for Stuyvesant High School and ENVIRON has considered aspects of that plan in developing these recommendations.

A monitoring and testing plan for P.S. 234 is proposed to pursue the following objectives:

- to assess the air quality at the school from this point forward;
- to augment existing agency air monitoring to fill coverage gaps near the school;
- to determine if cleaning has been sufficient and to determine if there are impacts since the last round of sampling conducted by the EPA on September 29, 2001, and since the last rounds of asbestos testing by Warren Panzer/ATC on behalf of the BOE;
- to assess the likelihood of future air quality impacts from fires and releases at Ground Zero on the area of the school;
- to establish a baseline data set prior to the eventual reopening the school so that data variabiity can be assessed and so there is a basis for comparison with post-reopening data;
- to monitor air quality after reopening;
- to establish a proper, practical and functional contingency plan that would be triggered by unacceptable monitoring results.

ENVIRON proposes a three-phased Testing and Monitoring Plan for P.S. 234:

Phase 1 Baseline Testing
Phase 2 Monitoring Prior to School Reopening
Phase 3 Monitoring After School Reopening.

We believe it is important to design and establish a proper monitoring and testing program that focuses on assessing all potentially significant risks, based on the potential risks identified in the data from the vicinity of Ground Zero. It is anticipated that this monitoring program will be undertaken by the BOE, although the involvement of the USEPA or the State of New York is possible. For example, the USEPA's web site (www.epa.gov) includes daily monitoring summaries, which state that additional fixed monitoring locations have been added by the USEPA in recent days, suggesting there may be some flexibility in the USEPA monitoring program. We encourage the Board of Education to make the necessary contacts with USEPA, and ENVIRON would be prepared to assist in that effort.

## Phase 1: Baseline Testing

As stated, since September 11, there has been little or no air testing for the primary contaminants of concern (volatile organic compounds [VOCs]; PCBs, dioxins and dibenzofurans, and metals) near P.S. 234. There is no permanent air sampling station near the school for any of these contaminants.

Further, there is almost a total lack of testing for polynuclear aromatic hydrocarbons (PAHs) since September 11. In order to obtain data to evaluate the current air quality conditions in and around the school, ENVIRON is proposing that additional air testing be performed at various locations in and around P.S. 234 for contaminants of concern, including PAHs and other semivolatile organic compounds; VOCs, such as benzene; PCBs; dioxins and dibenzofurans; and metals. In addition, the proposed monitoring program would include sampling for asbestos and particulate (PM2.5), as well as the direct read instrument measurements being performed as part of the on-going Stuyvesant High School monitoring.

In addition to the proposed air monitoring, it is also proposed to conduct follow-up wipe sampling of representative surfaces within the school. On September 29, 2001, the USEPA conducted limited wipe sampling for analysis of dioxins, PCBs and metals at P.S. 234. A total of eight samples were analyzed for metals and PCBs, with three of those samples also analyzed for dioxins and dibenzofurans. No samples were found to contain detectable PCB concentrations, while all of the dibenzofuran samples and two of the three dioxin samples were also below the detection limit. One dioxin sample contained a trace level of dioxin slightly above the method detection limit; that sample was collected from near the eastern (Chambers Street) entrance to the school. For the metals analyses, ENVIRON has received the results of three of the eight samples collected by USEPA and is awaiting the remaining five analyses from USEPA. Those three samples were found to contain primarily common metals, such as calcium, iron, and magnesium, with a number of other metals detected at lower concentrations.

Additionally, it is proposed to perform an evaluation for molds and fungi. This is necessary because the basement of the school was reportedly flooded with several inches of water due to the loss of power that occurred following the collapse of the World Trade Center, which caused the basement sump pumps to cease operation for a number of days. This may have created the potential for the growth of molds or fungi inside the school.

**Proposed Phase 1 Testing Protocol**

The following sampling summary is proposed for air (Table 1), surfaces (Table 2), and molds and fungi (Table 3). The final parameter list and sampling and analytical techniques to be employed will be determined in concert with the BOE's analytical laboratory.
The proposed sampling program is summarized below:

- Baseline Air Monitoring Program
  It is proposed to conduct baseline air sampling at four locations inside the school, two locations outside the school within the play areas, one location on the school roof, one location outside the school at the corner of Warren and Greenwich Streets, and one location between the school and Ground Zero, possibly in the area of Greenwich Street and Park Place or Barclay Street. In addition, ENVIRON proposes to collect one outdoor control sample and one indoor control sample at a location remote from the school and Ground Zero, potentially at the St. Bernards school, where the P.S. 234 students are currently attending classes, or another appropriate location. The specific analyses are summarized in Table 1 and include VOCs, SVOCs, PCBs, dioxins and dibenzofurans, metals and cyanide, asbestos and particulates, and direct readings or other measurements of carbon dioxide, carbon monoxide, hydrogen sulfide, chlorine gas, nitrous oxides and sulfur dioxide. To develop the baseline conditions, it is proposed to conduct sampling on three separate days in order to assess potential variability in air quality. Ideally, the three sampling dates should cover varying weather conditions, including clear and overcast days and varying wind directions, and at least one sampling event should be performed during generally southerly wind conditions. The results of these samples will be compared with the relevant PRGs and ERPG screening levels, as previously discussed, as well as available information on background levels.

- Baseline Surface Monitoring Program
  Given the limited nature of prior surface sampling in the school and the fact that virtually all of the surface samples were collected prior to the cleanup of the school, one additional round of surface sampling is proposed in order to evaluate the effectiveness of the previously completed school cleanup and the impact of potential dust settling in the month since the cleanup was completed. This surface sampling would focus on surfaces inside the school, concentrating on areas of highest likely exposure for children, including desks, banisters, the lunchroom, library, and gymnasium. This sampling would be performed if the results of the Baseline Air Monitoring Program discussed above indicate that it is reasonable to consider reopening the school in the near future. If the results of the Baseline Air Monitoring indicate that conditions do not appear acceptable to consider the reopening of the school in the near future, then the surface monitoring would be postponed until conditions improve sufficiently to consider reopening the school. The specific analyses are summarized in Table 2 and include PAHs, PCBs, dioxins and dibenzofurans, metals, and asbestos. It is expected that the Baseline Surface Monitoring would be performed once, with all samples collected during one day. The results of the Baseline Surface Monitoring sampling will be compared to available standards for surfaces, which have been established for certain parameters, such as PCBs and lead. For other contaminants, ENVIRON may develop screening levels based on the approaches utilized for the PCB and/or lead standards, depending upon their applicability to the conditions within a school.

- Evaluation of Molds and Fungi
  In order to assess whether the presence of water in the school basement during the period following September 11 when there was no electrical power at the school has resulted in the development of a mold or fungus issue within the school, it is proposed to collect random

samples from various surfaces in the school as well as air samples from various locations. Wipe samples and bulk material samples from the school basement will be collected and evaluated for viable mold content. Air samples from the basement, from the school air handling system, and from the school interior will be evaluated for total spore count and viable molds and fungi. The results of these samples will be compared with control samples or other relevant criteria.

## Phase 2: Monitoring Prior to School Reopening

Phase 2 will consist of the performance of environmental monitoring at regular intervals and at strategic locations at P.S. 234 prior to the reopening of the school. The purpose of the sampling is to develop a database so that a comparison can be made between pre- and post-reopening monitoring and to develop some sense of what could be anticipated in the future. Establishing a pre-opening database will minimize uncertainty going forward and enable the development of appropriate contingency plans. Based on the results of the baseline program and the Phase 2 monitoring, as well as future Ground Zero testing results, ENVIRON will recommend a continuing Phase 3 sampling program following the opening of the school that may include a more focused set of analytical parameters and sampling locations.

It is proposed to establish the Phase 2 monitoring program based on monitoring plan developed for Stuyvesant High School, but the program would be initially implemented at a frequency of three days per week at P.S. 234 increasing to five days per week during the week prior to the reopening of the school. In summary, the monitoring program currently being performed at Stuyvesant High School includes:

- Daily collection of 13 ambient air samples from inside the school and 8 air samples from outside the school, for analysis of asbestos using Transmission Electron Microscopy.
- Daily measurements of temperature, relative humidity, carbon dioxide, carbon monoxide, total VOCs, and respirable particulates (PM2.5).
- Once per week sampling of indoor surfaces for settled fiberglass, lead surface dust, and silica.

For the P.S. 234 monitoring program, it is proposed to make the following changes to the current Stuyvesant monitoring program. Additional modifications may be proposed following the collection and analysis of the Phase 1 baseline data.

- The P.S. 234 monitoring program should include all three floors as well as the penthouse; the cafeteria, gymnasium, and auditorium; and classrooms with side unit ventilators. Air sampling should also include sampling from outside of each of the two sets of air intake structures located on the roof.
- Real time measurements for VOCs may include use of a photoionization detector (PID), but more definitive indoor air sampling and analysis should also be performed at least once per week for VOCs, including benzene, with a detection limit of at least 6 ug/$m^3$ for benzene (the existing PRG for benzene).
- Real-time measurements of both PM2.5 and PM10 should be obtained.

One additional modification recommended to the Stuyvesant program relates to the screening level being used for silica/mineral dust. The Stuyvesant program cites OSHA Table 1910.1000 Z-3 for the limit for silica/mineral dust; however, that table does not provide the most stringent limit for silica/mineral dust. The OSHA permissible exposure limit ("PEL") is 10 milligrams of silica per cubic meter of air (10 mg/m$^3$) averaged over an 8-hour work shift. In addition, workers cannot be exposed to more than a total of 30 milligrams of silica per cubic meter of air (30 mg/ m$^3$) over an 8-hour shift. The National Institute for Occupational Safety and Health (NIOSH) has a recommended exposure limit that is much lower than the OSHA permissible exposure limit. NIOSH recommends that worker exposure be less than 0.05 mg/ m$^3$ for up to a 10-hour workday, or 40-hour workweek. As a conservative measure, the lower exposure limit should be the target value for silica.

In the event that elevated asbestos levels are found within the school, the cause should be assessed and the school appropriately decontaminated in accordance with appropriate protocols. Final clearance sampling would then be necessary. If unsatisfactory results are obtained outside the school on any day, the New York City Board of Health and the USEPA should be contacted to attempt to identify the causes. Windows at the school should remain closed at all times. Consideration needs to be given to potential modifications to the HVAC system of the school in order to increase the systems ability to filter out particulates and volatile organic compounds

ENVIRON recommends that a facility-specific contingency plan for P.S. 234 be developed following the collection of the Phase 1 and Phase 2 data and prior to reopening the school.

## Phase 3 Post-Reopening Monitoring

At this time we suggest that the modified Stuyvesant protocol as clarified above, be the assumed scope of work for the on-going monitoring activities at P.S. 234. Based on the results of the sampling conducted in Phases 1 and 2, and based on site conditions at and near Ground Zero, however, revisions to the modified Stuyvesant approach may be suggested.

We appreciate the opportunity to provide the above suggestions. If you have any questions, please do not hesitate to call.

Very truly yours,

Sincerely,

Thomas V. Fusillo
Principal

Jeffrey G. Entin
Manager

attachments

cc: G. Olsen, Esq.
B. Sacks
B. Orlan

Table 1
Phase 1 Baseline Monitoring Program – Air Sampling
(Proposed to be performed on three different days with differing weather conditions)

| Location | VOC, SVOC Organics + Library Search | PCBs | Dioxins/ Dibenzofurans | TAL Metals/ Cyanide | Asbestos & Particulates (PM10 and PM2.5) | Direct Readings (EPA Direct Reading List A or B See below) |
|---|---|---|---|---|---|---|
| PS 234 Outside, Front Courtyard | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List A<br>List B |
| PS 234 Outside, West Playground | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List A<br>List B |
| PS 234 Roof Outside of South Air Intake | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List A<br>List B |
| Outside school, Warren & Greenwich Streets | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List A<br>List B |
| Between school and Ground Zero | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List A<br>List B |

Table 1
Phase 1 Baseline Monitoring Program – Air Sampling
(Proposed to be performed on three different days with differing weather conditions)

| Location | VOC, SVOC Organics + Library Search | PCBs | Dioxins/ Dibenzofurans | TAL Metals/ Cyanide | Asbestos & Particulates (PM10 and PM2.5) | Direct Readings (EPA Direct Reading List A or B See below) |
|---|---|---|---|---|---|---|
| PS 234 Inside, First Floor,<br>Below random supply diffuser | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List B |
| PS 234 Inside, Second Floor,<br>Below random supply diffuser | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List B |
| PS 234 Inside, Third Floor,<br>Below random supply diffuser | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List B |
| PS 234<br>Inside first floor class with room with side intake vents | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List B |
| Control A – Outside, Urban | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List A<br>List B |
| Control B – Inside, Urban | one 8-hr sample | one 8-hr sample | one 8-hr sample | one 8-hr sample | two 4-hr samples | List B |

### Table 1
### Phase 1 Baseline Monitoring Program – Air Sampling
(Proposed to be performed on three different days with differing weather conditions)

| Location | VOC, SVOC Organics + Library Search | PCBs | Dioxins/ Dibenzofurans | TAL Metals/ Cyanide | Asbestos & Particulates (PM10 and PM2.5) | Direct Readings (EPA Direct Reading List A or B See below) |
|---|---|---|---|---|---|---|
| | | | | | | |

Notes:
TCL = Target Compound List (VOCs/SVOCs)
TAL = Target Analyte List (Metals)

Direct Read List A (hourly or continuous): Wind direction, temperature, Relative humidity
Direct Read List B: (Daily): Temperature, Relative humidity, particulates (PM2.5), Photoionization detector for VOCs, chlorine gas, hydrogen sulfide, nitrous oxides, sulfur dioxide, carbon dioxide, and carbon monoxide.

8-hr samples are 7:00am-3:00pm or match up with school day.
4-hr samples are 7:00am-11:00am and 11:00am-3:00pm or match up with school day
Final parameter list to be established based on EPA sampling data at Ground Zero

Table 2
Phase 1 Baseline Monitoring Program – Wipes/Dust Samples
(One time sampling)

| Location | PAHs | Dioxins/ Dibenzofurans | PCBs | TAL Metals | Asbestos |
|---|---|---|---|---|---|
| Inside air handling system ductwork, random locations | 3 | 3 | 3 | 3 | 12 |
| Banisters, random locations | 3 | 3 | 3 | 3 | 3 |
| Desks, random locations | 5 | 5 | 5 | 5 | 5 |
| Lunch room, gymnasium, library | 5 | 5 | 5 | 5 | 5 |
| On outside of south AHU | 1 | 1 | 1 | 1 | 1 |
| On outside of west AHU | 1 | 1 | 1 | 1 | 1 |
| First Floor, random locations | | | | | 3 |
| Second Floor, random locations | | | | | 3 |
| Third Floor, random locations | | | | | 3 |
| Penthouse, random location | | | | | 3 |
| Blank/Control | 1 | 1 | 1 | 1 | 1 |

Notes:
TAL = Target Analyte List (Metals)

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Table 3
Phase 1 Baseline Monitoring Program - Molds and Fungi
Wipes, Bulk and Air
(One time sampling)

| Location | Wipe, Viable Mold | Bulk, Viable Mold | Air, Total Spore Count | Air, Viable Molds/Fungi |
|---|---|---|---|---|
| Basement Walls, near floor | 3 | 3 | 3 | 3 |
| Basement, locations TBD | 3 | 3 | | |
| Basement, wood, wallboard or cellulose-containing material | 3 | 3 | | |
| First Floor, Lobby | 1 | 1 | 1 | 1 |
| Inside air handling system | 3 | | 1 | 1 |
| On Supply diffusers, random | 3 | | | |
| Outside supply diffusers, random | | | 3 | 3 |
| Control, Outside | | | 1 | 1 |

ENVIRON

January 17, 2002

Mr. George Olsen, Esq.
Parent-Teacher Association
Public School 234
292 Greenwich St
New York, NY 10007-1081

Re: Report to Public School 234 Parent-Teachers Association

Dear Mr. Olsen:

The purpose of this letter is to provide the P.S. 234 Parent-Teacher Association with the results of ENVIRON's evaluation of environmental data that was collected in and around the P.S. 234 facility. The data have been collected by the Board of Education's consultants, ATC Associates, as well as the School Construction Authority and its consultants. Aspects of the sampling were performed in response to recommendations made by ENVIRON on behalf of the P.S. 234 PTA. The sampling and analysis recommendations made by ENVIRON were based on several inspections of the school building and grounds, review of previously-collected data at the P.S 234 facility, and an initial review of publicly-available analytical data collected for ground zero and the areas around ground zero by the U.S. Environmental Protection Agency, the New York State Department of Environmental Conservation, the Occupational Safety and Health Administration, and other agencies.

Details of all the sampling conducted at P.S. 234 are provided on the attached summary. The sampling results were reviewed by specialists at ENVIRON with expertise in human health risk assessment. The results of our evaluation of the sampling are summarized below:

- **Asbestos:** Only trace levels (less than one percent) of asbestos were ever detected in any samples collected inside the school (and only in samples collected prior to the cleanup of the school) and the vast majority of samples in the school have shown no detectable asbestos fibers. Only one debris sample collected from around the school (debris from the roof), was found to contain asbestos above the regulatory threshold of 1 percent. Extensive cleaning of the school interior and exterior was conducted, followed by aggressive air monitoring. The results of several rounds of air testing following the completion of the cleaning operation, conducted using Transmission Electron Microscopy (TEM), have shown no asbestos fibers detected in any sample, either inside or outside of the school. Cleanup was also performed in the playground and on the roof to remove debris that contained trace levels of asbestos and follow-up sampling has not detected any asbestos. Further asbestos monitoring inside and outside the school is part of the on-going monitoring program, as discussed below.

- **Interior Surfaces:** Following the cleaning of the school, extensive wipe testing of interior surfaces was performed for a wide variety of constituents, including lead and other metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and dioxins and related compounds. ENVIRON compared the results to regulatory standards for interior surfaces, where available (e.g., lead and PCBs), to other available screening levels, and to screening levels developed using a USEPA risk-based approach, with exposure assumptions based on a school setting, and very protective risk targets ($10^{-6}$). None of the analyzed constituents were detected in any sample at a concentration above a standard or screening level. A physical inspection of the school shows that the cleaning appears to have been very thorough, as confirmed by the sampling results. Additional surface sampling is part of the on-going monitoring program, as discussed below.

- **Air Quality**: Indoor and outdoor air quality sampling has been conducted in the school on a number of days since the completion of the cleaning of the school. Sampling has included a wide range of analytical parameters, including volatile organic compounds (VOCs) and hydrocarbons; metals, including mercury; PAHs; PCBs; dioxins and related compounds; particulates; and a number of other air quality constituents. Sampling showed that the levels of constituents both outside and inside the school were generally consistent with concentrations expected in an urban area. On a few sampling days, levels of certain VOCs in indoor air in the school were at slightly higher levels, but it was noted that extensive painting and cleaning was occurring inside the school during those periods. VOCs are common constituents of paints and some cleaning products. Particulate levels both inside and outside the school have shown some variability. Some individual instantaneous measurements of the concentration of respirable particulates (dust) have been above 65 $ug/m^3$, which is the outdoor air quality standard as a 24-hour average concentration, as well as the 40 $ug/m^3$ guideline for sensitive receptors. These initial particulate measurements were made with the school ventilation systems shut down while upgrades to the filtration systems were being completed. Based on these readings, further assessment is appropriate. ENVIRON has requested that the Board of Education further evaluate particulate levels at the school with the upgraded ventilation system operating, and those measurements have reportedly begun. Continued air sampling, including sampling for particulates and VOCs inside and outside the school, is included as part of the on-going monitoring program.

Based on ENVIRON's review of the available data collected at and in the vicinity of the school, and pending further evaluation of particulate levels as described above, ENVIRON's preliminary conclusion is that the results of the testing to date are generally representative of conditions to be expected for a school in an urban setting and that the existing environmental conditions inside the school do not appear to pose a significantly greater health risk for the general population, including children, than conditions that would be anticipated at a similar school in an urban setting. Outdoor air quality in the area of the school has generally improved over the past several weeks, since the initial air sampling was performed. ENVIRON understands that the Board of Education is currently working with a team of specialists to assess outdoor recess policies.

In order to continuously evaluate conditions inside and outside the school on an on-going basis, the Board of Education will be conducting monitoring similar in nature to that being performed at Stuyvesant High School. This monitoring program will include, at a minimum: 1) daily air sampling for asbestos, particulates, and various indoor air quality parameters; 2) weekly air sampling for VOCs and hydrocarbons and metals; and 3) weekly surface testing for PCBs, dioxins, fiberglass, silica, and lead. The Board of Education and its consultant are in the process of implementing the on-going monitoring program, aspects of which have already begun to be implemented.

If you have any questions concerning this letter, please contact me at your earliest convenience.

Sincerely,

Thomas V. Fusillo
Principal

attachment

# Summary of Environmental Sampling Conducted at PS 234

## A. Sampling Conducted Independently by the New York City Board of Education

### Initial Asbestos Testing (October 2, 2001)

ATC performed the initial asbestos testing in and around the school on October 2, 2001. That testing included collection of 50 dust samples and 20 ambient air samples from inside the school, and three debris samples from the roof of the school. ATC reported that none of the 50 dust samples contained any detectable asbestos fibers, and none of the 20 air samples contained any asbestos structures. Two of the three debris samples from the roof contained traces of asbestos, at less than 1 percent.

### Follow-up Testing for Asbestos (October 4-16, 2001)

Aggressive air sampling (sampling conducted with ventilation systems operating and using a leaf blower to mobilize dust from surfaces into the air) was conducted for asbestos on October 4, prior to the beginning of cleaning operations at the school, and October 16, following the cleanup activities. The October 4 sampling included the analysis of five samples from inside the school. Three of those five samples contained no asbestos structures, while the other two samples contained 3 and 14.8 structures/mm$^2$, respectively, less than the AHERA clearance level of 70 structures/mm$^2$. The October 16 testing included the collection of eight air samples from inside the school for analysis of asbestos. All eight of the air samples were found to contain no asbestos structures. In addition to the air testing, four wipe samples were collected from lockers around the school on October 14. All four of those samples were reported to have no asbestos detected.

### Debris and Soil Sampling for Asbestos (October 30, 2001)

Following a site inspection involving the Board of Education, School Construction Authority, ENVIRON and PTA representatives, ATC performed additional testing of debris from the roof and under the rubber padding in the playground, as well as soils from planters located in the school yard. ENVIRON had recommended the cleanup of the debris in all these areas based on visual observations made during an initial inspection of the school. One sample of debris from the roof was found to contain 1.5 percent asbestos, which is above the 1 percent limit used to define an asbestos-containing material. Most of the other roof debris samples contained between a trace of asbestos and 0.75 percent asbestos. Based on these results, the School Construction Authority (SCA) contracted for the removal of all the stone ballast and debris from the roof.

Three samples of debris from beneath the rubber mats in the playground were all found to contain between a trace and 0.25 percent asbestos. Based on these results, the SCA contracted for the removal and cleaning of the rubber mats and the playground surfaces.

There were a total of 13 soil samples collected from planters for analysis of asbestos. Nine surface soil samples were found to contain either no detectable asbestos or trace levels of asbestos. Four samples collected from a depth of six inches below the ground surface were all found to contain no detectable asbestos. Based on these results, the SCA Contracted for the removal and replacement of the surficial soils in all the planters around the school.

## School-Wide Lead Dust Sampling (November 29, 2001)

To evaluate the adequacy of cleaning, an extensive dust sampling program was implemented for analysis of lead. On November 29, forty dust samples were collected from throughout the school for lead analysis. Of the forty samples, 37 contained no detectable lead. The remaining three samples contained between 4.8 and 17.9 ug/ft$^2$, which are all less than the most-stringent acceptable level established for lead abatement projects, 40 ug/ft$^2$.

## Follow-Up Air Monitoring for Asbestos (November 29-December 2, 2001)

Eighteen air samples were collected on each day during the period November 29 to December 2. Samples were taken from various locations throughout the school. No asbestos structures were detected in any of the samples collected on those four days.

## Initial Indoor Air Quality Assessment (November 29-December 2, 2001)

Independent of the sampling requested by ENVIRON on behalf of the PS 234 Parent Teacher Association, the Board of Education retained ATC Associates Inc. to perform air testing during the period November 29 through December 2, 2001. This testing included the collection of four air samples (three inside the school and one outside the school) per day for analysis of eleven metals and a number of hydrocarbon compounds, including benzene and other volatile organic compounds, as well as monitoring for other air quality parameters, such as carbon dioxide, carbon monoxide, total volatile organic compounds, and particulates (PM2.5). Sampling locations varied on each of the four days and included the following locations:

- November 29: cafeteria, library, Room 305, outside on the east side of PS 234.

- November 30: Room 111, Room 229, Room 329, outside on the north side of PS 234.

- December 1: Room 122, Room 222, Room 322, outside on the roof by the HVAC intake.

- December 2: first floor hall by exit 1; second floor hall by exit 1; third floor hall by exit 1; roof.

The results of this sampling are as follows:

- **Metals:** The results of the metals analyses showed that most metals were not detected either inside or outside of the school in any of the samples. Chromium was detected at trace levels in all samples but at similar levels to the method blank. Traces of iron were detected in two of the samples.

- **Hydrocarbons:** The results of the hydrocarbon analyses showed that most samples had low to non-detectable levels of most of the hydrocarbon compounds that were tested, although most samples also showed some level of undifferentiated hydrocarbons, which could represent a material such as mineral spirits. A few hydrocarbon compounds were detected in one or two sample each at concentrations above the method detection limit, including xylenes (maximum concentration of 0.294 ppm), ethylbenzene (0.154 ppm), tetrachloroethene (0.346 ppm), and chlorobenzene (0.129). There was extensive painting being conducted inside the school during the sampling period, as well as cleaning. The targeted hydrocarbon compounds detected in a few samples, which included ethylbenzene and toluene, are often present in certain paints or products used in painting. It is significant to note that the samples collected on December 2 contained no specific hydrocarbon compounds and only trace levels of unspecified hydrocarbon compounds. It is stated in the ATC report that the paint odors, which had been strong inside the school during the earlier sampling dates, had largely dissipated by December 2. Follow-up sampling for hydrocarbons and other volatile organic compounds is discussed later.

- **Particulates and Other Air Quality Parameters:** Levels of carbon dioxide, carbon monoxide, and relative humidity were within guideline ranges. Levels of particulates (PM2.5) varied significantly during the period and appeared to generally correlate with outdoor levels. On one of the days, November 30, the particulate levels also exceeded the 65 ug/m$^3$ standard for normal populations. It should be noted that 65 ug/m$^3$ limit is established for outdoor conditions as an average concentration over 24 hours. On three of the four dates, some particulate measurements exceeded the guidance level of 40 ug/m$^3$ established by USEPA for sensitive receptors. It should be noted that there has been some discussion that the method used to measure particulate levels may register higher particulate levels than would be measured by performing a gravimetric analysis of total particulates. ENVIRON has requested that the Board of Education's consultant perform a comparative analyses using the particulate meter and gravimetric analysis to determine the comparability between the two methods. The results of that comparison has not yet been received.

Total volatile organic compound concentrations varied widely during the period and seemed to correlate with painting being conducted within the school. ATC reported that the highest total VOC levels were in areas where strong paint odors were noted.

## B. Sampling Conducted at Request of PS 234 PTA

In addition to the sampling being performed by the Board of Education, ENVIRON provided a recommendation for conducting additional sampling at PS 234 to address potential air quality issues in and around the school as well as evaluate the adequacy of the cleanup operation conducted at the school. Following discussions with the New York City Board of Education, a final scope of sampling was developed, which included:

- Conducting air monitoring at four locations inside the school, two locations outside the school within the play areas, one location on the school roof, one location outside the main entrance to the school. The samples were to be analyzed for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), PCBs, dioxins and dibenzofurans, metals, cyanide, and particulates. In addition, measurements of other potential air pollutants were to be performed, including carbon dioxide, carbon monoxide, hydrogen sulfide, chlorine gas, nitrous oxides and sulfur dioxide. The parameter list was developed based upon a review of air quality data for the vicinity of ground zero.

- Conducting one round of wipe sampling from surfaces throughout the school for analysis of PAHs, PCBs, dioxins and dibenzofurans, metals, and asbestos.

- Conducting air sampling for fungal spores to assess potential impacts to indoor air quality from minor flooding that occurred in the school basement in the days immediately after September 11.

The results of the sampling are summarized below.

### Air Monitoring

### Asbestos (December 5, 9, and 12, 2001)

A total of 18 air samples per day were collected on each of three days from a variety of locations inside and outside the school and analyzed for asbestos using transmission electron microscopy (TEM). ATC reported that none of the 54 air samples collected was found to contain any measurable asbestos structures.

## Polychlorinated Biphenyls (PCBs) (December 6, 8, and 11, 2001)

Eight air samples were analyzed from inside and outside PS 234 on December 6, 8 and 11, 2001. PCBs were not detected in any of the 8 samples collected on any of the three days.

## Polycyclic Aromatic Hydrocarbons (PAHs) (December 6, 8, and 11, 2001)

The only PAH compound detected in the samples from outside the school was naphthalene, at concentrations from below the detection limit to 0.32 ug/m$^3$, while inside the school, naphthalene (ND to 0.69 ug/m$^3$), 1-methylnaphthalene (ND to 0.49 ug/m$^3$), and 2-methylnaphthalene (ND to 0.92 ug/m$^3$) were detected. Naphthalene is the major constituent of mothballs, and all three compounds are found in cigarette smoke. The detected concentrations are all within documented urban background levels. While there are no relevant standards for these compounds, the USEPA Region 9 preliminary remediation goal (PRG) for naphthalene in air, adjusted for a school exposure scenario, is 8.7 ug/m$^3$ for naphthalene. There is no PRG for either 1-methylnaphthalene or 2-methylnaphthalene. Naphthalene concentrations in all samples were well below the adjusted Region 9 PRG.

## Dioxin and Dibenzofurans (December 6, 9, and 12, 2001)

Trace levels of dioxins were detected in all the indoor and outdoor samples collected on all three days. Reported TCDD Equivalents (a measure of the toxicity of the dioxin and dibenzofuran constituents detected in the sample expressed in terms of the toxicity of 2,3,7,8-tetrachloro-dibenzo-p-dioxin, the most potent of the dioxin isomers) were as follows (in picograms per cubic meter, pg/m$^3$):

| Date | Indoor Concentration | Outdoor Concentration |
|---|---|---|
| December 6 | 0.0078-0.028 pg/m$^3$ | 0.038-0.073 pg/m$^3$ |
| December 9 | 0.0079-0.022 pg/m$^3$ | 0.028-0.037 pg/m$^3$ |
| December 12 | 0.0013-0.0035 pg/m$^3$ | 0.0014-0.0022 pg/m$^3$ |

There are no relevant standards for dioxins in air in a school setting. USEPA is utilizing a screening level of 160 pg/m$^3$, assuming a one-year exposure, and 5.4 pg/m$^3$, assuming a 30-year exposure. The USEPA Region 9 preliminary remediation goal (PRG) for dioxin in air adjusted for a school exposure scenario is 0.126 pg/m$^3$. The dioxin levels were all well below any of these screening levels.

## Mercury (December 7, 9, and 12, 2001)

Mercury was not detected in any of 8 samples collected on December 7, 9, and 12, 2001 above the level detected in the method blank.

## Metals (December 5, 8, and 12, 2001)

Several metals were not detected in 8 samples collected inside and outside of the school. For the metals detected, indoor concentrations were generally lower than outdoor levels. Metals concentrations were generally higher in the samples collected on December 5 and decreased in the December 8 and December 11 samples. In the December 5 samples, common metals such as iron and aluminum were detected both inside and outside the school. In addition, copper and chromium were also detected both inside and outside of the schools, with chromium detected at up to 0.442 ug/m$^3$ outside and 0.348 ug/m$^3$ inside, and copper at up to 0.692 ug/m$^3$ outside and 0.41 ug/m$^3$ inside. These levels are within the range of urban background levels published by the U.S Department of Health and Human Services. For the samples collected on December 5, chromium was also detected in the blank sample at a level (0.383 ug) similar to those detected in the air samples (0.309 ug to 0.54 ug), indicating that the actual chromium concentrations in air may be significantly lower than indicated by the analyses. ATC, the firm that performed the sampling for the Board of Education, estimated that actual chromium concentrations in the samples would decrease by 80 to 90 percent when the blank concentrations were removed. On December 8 and 11, only copper and chromium were detected in any of the air samples inside or outside of the school. Chromium concentrations on December ranged up to 0.262 ug/m$^3$ outside the school and 0.270 inside the school. On December 12, chromium was only detected in one of the four indoor samples and two of four outdoor samples at maximum concentrations slightly lower than on December 8. The USEPA is utilizing a screening level for hexavalent chromium of 0.6 ug/m$^3$. These samples were analyzed for total chromium, which includes both the hexavalent and trivalent species. The total chromium concentrations in all the samples were below this USEPA screening level.

## Cyanide( December 6, 8, and 11, 2001)

Cyanide was not detected in either of two samples collected on December 6, 2001 at levels above the method blank. On December 8, cyanide was detected in both samples outside of the school as well as in the method blank sample, at concentrations (corrected for blank levels) of 0.0042 and 0.0052 mg/m$^3$, and on December 11, cyanide was detected in both outside samples at blank corrected concentrations of 0.0008 mg/m$^3$ and 0.0048 mg/m$^3$. All the measured cyanide concentrations are below the USEPA Region 9 PRG for cyanide in air, adjusted for a school exposure scenario, of 0.0087 mg/m$^3$. Sources of cyanide in the environment include vehicle exhaust, industrial sources, and natural biogenic processes.

## Hydrocarbons

On December 5, 2001, trace levels of one target compound, acetone, were detected in one outdoor sample (0.347 ppm) and two indoor samples (0.101 ppm and 0.116 ppm). In addition, undifferentiated hydrocarbons were also detected in two indoor samples. Painting and cleaning operations were being conducted on that day and these results are consistent with either or both of those operations as the potential source of the trace levels detected.

None of the target hydrocarbons, including volatile organic compounds such as benzene, were not detected in any of 8 air samples collected from inside or outside the school on December 9 or 11, 2001.

## Volatile Organic Compounds plus Library Search (December 15, 2001)

Five air samples were collected for analysis of volatile organic compounds with a 15-compound forward library search (VOC+15) on December 15, 2001. Sampling locations included three outdoor samples (main entrance, roof, and the rear playground) and two indoor samples (cafeteria and second floor hallway). A few targeted VOCs were detected at trace levels both outside and inside the school, including benzene (maximum 0.9 ppb outside, 0.8 ppb inside), ethylbenzene (0.3 ppb outside, 1.0 ppb inside), toluene (1.6 ppb outside, 2.8 ppb inside), and xylenes (1.5 ppb outside, 4.7 ppb inside). In addition, several non-target VOC compounds were detected both inside and outside of the school. Overall, the type and levels of VOCs detected are generally consistent with urban background concentrations documented by USEPA.

## Particulates and Other Air Quality Parameters (December 8 to 14, 2001)

Levels of carbon dioxide, carbon monoxide, and relative humidity were within guideline ranges. Levels of particulates (PM2.5) varied significantly during the period. Based on periodic measurements taken at several locations inside and outside of the school, the average particulate levels on all five days (indoor averages ranged from 22 to 36 ug/m$^3$) were below the threshold level of 40 ug/m$^3$ used by USEPA for sensitive receptors inside the school, although some instantaneous particulate measurements were higher, up to 68 ug/m$^3$, which is slightly above the 65 ug/m$^3$ guideline used by USEPA for normal populations. It should be noted that the 40 ug/m$^3$ and 65 ug/m$^3$ limits are established for outdoor conditions as an average concentration over 24 hours. Outdoor levels were approximately similar to indoor readings on December 8 and 9, but outdoor readings were higher than indoor readings on December 10 and 12, with average outdoor readings of 51 ug/m$^3$ on December 10 and 52 ug/m$^3$ on December 12.

In addition to the periodic particulate monitoring conducted, three locations were monitored continuously for approximately 24 hours during this period. One indoor location, the cafeteria, had average particulate levels of 30 ug/m$^3$ on December 8-9, 44 ug/m$^3$ on December 11-12, and 58 ug/m$^3$ on December. Outdoor levels were somewhat higher, with average levels on the roof exceeding 65 ug/m$^3$ during December 12-13 and 13-14, and outside the main entrance on December 12-13. These measurements were made with the school ventilation system shut down while improved filtration systems were installed. Further assessment of particulate levels is warranted with the upgraded ventilation systems operating. As previously discussed, an evaluation of the testing method being used for particulates is also underway, along with further particulate monitoring to assess current air quality. In general, particulate levels in the area of the school, including at a measurement station at the Borough of Manhattan Community College, have been well below 40 ug/m$^3$ on most days in recent weeks.

Instrument readings for total volatile organic compounds, nitrous oxide, sulfur dioxide, and hydrogen sulfide were all below the instrument detection limit. Nitrogen dioxide was measured at average concentrations ranging from 0.1 ppm to 0.3 ppm indoors, and 0.2 ppm to 0.4 ppm outdoors. These levels exceed the USEPA ambient air quality standard of 0.053 ppm. These readings are believed to be the result of instrument error. Re-testing using a more sensitive meter at a nearby school confirmed instrument error from the earlier readings at that school and re-testing of nitrogen dioxide levels at PS 234 have confirmed this conclusion, based on information received verbally from ATC.

## Wipe Samples

### Dust Sampling for Asbestos (December 5, 2001)

A total of 22 dust samples were collected from throughout the school on December 5 for analysis of asbestos. ATC reported that no asbestos was detected in any of the 22 dust samples.

### Comprehensive Surface Sampling (December 5, 2001)

Ten wipe samples were collected from various locations inside PS 234 on December 6, 2001 for a variety of potential contaminants, including dioxins and dibenzofurans, metals, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). The sample locations included:

- Cafeteria - windowsill
- Kitchen – serving windowsill
- Room 116 – table surface
- Room 120 – windowsill
- Room 211 – table surface
- Library – table surface
- Library – bookcase surface
- Room 305 – bookcase surface
- Room 316 – table surface
- Gymnasium – landing.

The results of the analyses of these samples are discussed below.

## Polychlorinated Biphenyls and Polycyclic Aromatic Hydrocarbons

None of the ten surface samples contained PCBs at concentrations above the laboratory method reporting level (2 ug). None of the ten surface samples contained polycyclic aromatic hydrocarbons above the laboratory method reporting limit (5 ug).

## Dioxin/Dibenzofurans

Trace levels of dioxins and dibenzofurans were detected in nine of the ten surface wipe samples collected, as expected. Only the sample collected from the gymnasium floor did not contain any measurable dioxin. TCDD equivalent concentrations were reported at highest concentrations in three wipe samples collected from windowsills (0.017 to 0.041 $ng/m^2$) and lower in samples collected from tabletops and bookcases (0.00018 to 0.00074 $ng/m^2$). There are no established standards for dioxins/dibenzofurans on surfaces. The National Research Council (1988) has a published a recommended surface criterion for dioxins of 25 $ng/m^2$ for an office building setting, and cites recommended concentrations in several states ranging from 1 to 25 $ng/m^2$. ENVIRON developed a preliminary screening level of 0.055 $ng/m^2$ using a USEPA risk-based approach, reasonable exposure assumptions for a school setting, and very protective risk targets ($10^{-6}$). All of the reported TCDD equivalent concentrations were less than the preliminary screening level, and well below the recommended criteria cited by the National Research Council.

## Metals

Metals were detected in all samples, as expected. Common metals, such as iron, copper, manganese, and zinc were detected in all 10 samples. Trace metals, such as chromium, cadmium, and nickel, were detected in four or less of the samples. Only lead has regulatory levels for surface dust (lead was discussed above). ENVIRON developed preliminary screening levels for the analyzed metals utilizing a USEPA risk-based approach, with reasonable exposure assumptions for a school setting, and very protective risk targets ($10^{-6}$). All of the detected metal concentrations were below the preliminary screening levels.

## Mold Assessment

Because there was some minor flooding in the basement of the school in the few days immediately after September 11, an assessment was performed to determine if there were any issues related to mold growth or fungal spores in the school. An inspection was performed of the basement by ATC Associates on October 31 which found no evidence of microbial growth or mold growth evident. ENVIRON performed a follow-up inspection and made the same observations. To confirm those observations, sampling for fungal spore counts was performed inside and outside the school on December 18, 2001. That sampling found that spore counts inside the school were lower than outside the school, indicating no evidence of amplified fungal growth in the school.

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# Parent Association (or PTA) Communications—P.S. 150

December 1, 2001

Proposal by the PS 150 Environment Committee

Jaimie Cloud (212) [redacted]
Udo Drescher (212)[redacted]
Emita Gantt (718)[redacted]
Gerry Griffin (212)[redacted]
Charles Komanoff [redacted]
Mark Lenetsky (21[redacted]
Greg Smith (212) [redacted]
Deborah Thomas (212)[redacted]
Anita Yeung (212) [redacted]

The committee members are mindful that the protection of the physical health of our children (i.e. the minimization of risks that might impact their health) is the pre-eminent factor in determining when PS150 returns to Independence Plaza, but that other factors such as educational concerns and mental health considerations will influence that decision as well.

We recommend that the following be presented to the Board of Education as necessary conditions for the school to return:

1. The plaza work currently underway has been completed in a manner that the plaza and school entrance area are safe for use.
2. Applicable building safety regulations such as the New York City Fire Safety Code have been met, and compliance has been confirmed by the appropriate agency (e.g. NYC Fire Department).
3. An evacuation plan is in place as part of the School Safety Plan and has been publicized. A routine drill has to be conducted as soon as practical to ensure that at least two means of egress are indeed available in case of an emergency.
4. The comparative epidemiological study of health issues at Stuyvesant High School following that school's return on October 9 has been made available. If there is an indication that conditions at Stuyvesant are contributing to health impacts, the return to PS150 shall be postponed until we reach a reasonable level of certainty that similar conditions will not affect PS150.
5. The Board of Education in cooperation with the Environment Committee (and any consultant the PS150 PTA may hire) has developed, agreed to, and taken all necessary steps to implement an effective monitoring program similar to that used at other neighborhood schools for testing water, air and surface contamination at the site. This will include testing prior to and following our return to the school.

6. Additional data gathered from sampling and testing at other relevant locations (PS234, Stuyvesant, PS/IS 89 and the immediate vicinity of these schools) has been made available to the Environment Committee for review and analysis.

7. Air conditioners have been installed in all classrooms, and all window frames have been sealed to prevent uncontrolled intrusion of outside air.

8. An engineering analysis has been prepared by a BoE engineering consultant (or a consultant the PTA may wish to employ) for the air supply and circulation system, including air intake structures, venting, heating and cooling, for the entire school. The analysis must be followed by recommendations for a comprehensive solution, including but not limited to:

    - the use of air conditioning,
    - ventilation systems,
    - filtration such as HEPA filters, and
    - the use of air purifiers

    so that the best feasible air purification can be achieved. These solutions will have been installed to the satisfaction of the Environment Committee.

9. A maintenance plan has been developed and implemented to

    a. ensure that the janitorial staff properly maintain equipment (e.g. change filters on a regular basis) and

    b. provide for ongoing, periodical cleaning (both outdoors and indoors) to reduce to the greatest extent practicable the introduction or resuspension of dust and other particulate matter.

10. The fires at the World Trade Center site must be extinguished before it is safe to return.

# SAMPLING AT PS150

Below is my synopsis of the test results available for PS150 as of Thursday, December 6, 2001.

To sum it up:
There was significant **lead** contamination in the school building, namely in "visible debris." The internal area of the school was repeatedly cleaned. The most recent samples do **not** show the presence of lead in excess of the lead levels considered "acceptable."
**Asbestos** was present in dust sampled in September, but not in the air samples. Subsequent samples were conducted for air only – none showed the presence of asbestos.
**Indoor Air Quality** samples were conducted on 4 consecutive days between Nov. 29 and Dec. 2. All samples showed levels below the thresholds applied by the consultant except for November 29, when respirable particulates were found above the EPA threshold both within and outside of the school.
Results from **metal and hydrocarbon** air sampling have yet to be submitted.

## I. LEAD

Standard: New York City Health Code part 173.14: (Final clearance after lead abatement has taken place is achieved when dust wipe samples indicate lead levels below those listed below)

| | |
|---|---|
| Window wells: | 400 µg/sq.ft |
| Windowsills | 250 µg/sq.ft |
| Floors: | 40 µg/sq.ft |

### 1st report, dated November 30, 2001

Date of sampling: November 29. 2001
Out of 64 samples taken, 1 sample collected from floor and 5 samples collected from window wells surfaces contain lead in dust above the guideline level of 40 µg/sq.ft and 400 µg/sq.ft, respectively. The dust samples found to contain lead above the guideline levels for floor and window wells were collected from the following locations (in parenthesis I put the "surface condition" entry from the chain of custody sheets; surface condition refers to one of the following 3 categories: "visible dust", "visible debris", "no visible dust or debris":

| | |
|---|---|
| 2nd floor girl's toilet – floor | 103.2 µg/sq.ft (no visible dust or debris) |
| Room 501, 2nd window – window well | 521.2 µg/sq.ft (visible debris) |
| Room 502 2nd window – window well | 1,274.7 µg/sq.ft (visible debris) |
| 3rd floor corridor, 6th window – window well | 1,627.8 µg/sq.ft (visible debris) |
| Room 403, 4th window – window well | 947 µg/sq.ft (visible debris) |
| 1st floor foyer, 5th window – window well | 1,570.4 µg/sq.ft (visible debris) |

Recommendations (from ATC, the consultant):
Cleaning all visible dust, including but not limited to window wells and floors throughout the school building by an accredited lead abatement contractor utilizing lead abatement processes.

**2nd report, dated December 3, 2001**
Date of sampling: November 30, 2001 ("after the completion of the lead-in-dust cleanup" – I assume the cleanup was conducted following the detection of lead on November 29, 2001)
59 dust-wipe samples were collected. 1 sample collected on the cafeteria windowsill surface came back with a lead concentration of 456.2 µg/sq.ft (= 206.2 µg/sq.ft above the level considered acceptable).
Recommendations (from ATC, the consultant):
"An accredited lead abatement contractor should re-clean all surfaces, including but not limited to window wells, windowsills and floor in the cafeteria."
"Collect additional dust wipe samples after the re-cleaning in the cafeteria is completed."

**3rd report, dated December 4, 2001**
Date of sampling: December 1, 2001 (the Nov. 30 results were obviously reported to the BoE prior to the creation of the Dec. 3 report, and the additional cleanup in the cafeteria was undertaken either on Nov 30 or earlier on Dec 1).
4 dust-wipe samples were collected in the cafeteria (2 on the floor, one on the window sill, one on the window well). They all came back below the detection limit.

## II. ASBESTOS

**1st report, dated September 24, 2001**
Date of sampling: September 21, 2001
Objective of sampling: determine whether asbestos is present (no quantitative results).
21 dust samples (using 3M scotch tape and a glass slide) and 9 ambient air samples were collected throughout the school building. The ambient air samples were analyzed using Transmission Electron Microscopy (TEM), the dust samples were analyzed using Polarized Light Microscopy (PLM).

None of the 9 ambient air samples contained any asbestos structures.
2 of the 21 dust samples contained asbestos fibers (chrysotile asbestos): one was taken from the window well of the general office (the sample contained chrysotile, cellulose fibers, and mineral fillers); one from a table in the library (containing chrysotile, cellulose, fiberglass, and mineral fillers). A significant number of other samples contained no asbestos but cellulose fibers, fiberglass, and mineral fillers.

**2nd report, dated November 30, 2001**
Date of sampling: November 29, 2001 (ATC group # 5997)
15 air samples (each taken over a period of ~ 210 minutes) from different locations in the building were analyzed using TEM. No asbestos structures were detected in any of the samples.

**3rd report, dated November 30, 2001**
Date of sampling: November 30, 2001 (ATC group # 6008)
15 air samples (each taken over a period of ~ 210 minutes) from different locations in the building were analyzed using TEM. No asbestos structures were detected in any of the samples.

**4th report, dated December 2, 2001**
Date of sampling: December 1, 2001 (ATC group # 6014)
15 air samples (each taken over a period of ~ 210 minutes between ~ 11:30 am and 3:30 pm) from different locations in the building were analyzed using TEM. No asbestos structures were detected in any of the samples.

**5th report: December 3, 2001**
Date of sampling: December 3, 2001 (ATC group # 6022)
15 air samples (each taken over a period of ~ 210 minutes between ~ 10:30 am and 2:40 pm) from different locations in the building were analyzed using TEM. No asbestos structures were detected in any of the samples.

## INDOOR AIR QUALITY ASSESSMENT

**Date of (to date only) report: December 6, 2001**
Sampling dates: November 29, 30 and December 1 and 2, 2001
Scope of work: assess the basic parameters of temperature, relative humidity, carbon dioxide (CO2) and carbon monoxide (CO). Total volatile organic compounds (TVOCs) and respirable particles were also measured.
The report contains the following reservation: "As with all such assessments, there were inherent limitations created by constraints of time, operational and work practice variability, variations in indoor air quality parameters and sampling and analytical accuracy. The results of the sampling represent conditions found on the dates of the survey and may not represent conditions found at other times. The information presented in this report should be used by the BoE as a guide to assess the need for further improvements in current indoor air quality control activities."

The following lists the parameter, the target level, and the agency or organization whose guidelines were used to determine the target level:

**Carbon dioxide**: < 700 parts per million (ppm) above background level, American Society for Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)

**Carbon monoxide**: 9 ppm, ASHRAE (adopted from USEPA)

**Respirable particulates (pm 2.5)**: 65 micrograms per cubic meter of air ($\mu g/m^3$) 24-hour average

**Temperature**: summer 73-79 degree F at 50% relative humidity, winter 68-75 degree F at 50% relative humidity (ASHRAE)

**Relative Humidity**: 30 – 60% (ASHRAE)

**Total Volatile Organic Compounds (TVOCs)**: 1 ppm, (American Industrial Hygiene Association)

ATC collected 127 sets of environmental measurements over the four days, consisting of 120 in the school building and 7 outdoors. 29 indoor readings plus 1 outdoor reading were taken on November 29; 31 indoor readings plus 2 outdoor readings were collected on November 30; 33 indoor readings and 2 outdoor readings were conducted on December 1 and 2. The indoor readings encompassed all five floors of the school.

| **Parameter** | **November 29** | **November 30** | **December 1** | **December 2** |
|---|---|---|---|---|
| Temperature (degree F) | 63.5 – 73.5 in<br>58.5 outdoors | 67.6 – 76.8<br>68.8 outdoors | 69.7 – 76.7<br>67.8 outdoors | 65.1 – 73.5 in<br>63.2 outdoors |
| Relative humidity | 52.0 – 64.5 in<br>70.0 outdoors | 63.3 – 72.8<br>76.8 outdoors | 52.5 – 62.7<br>49.7 outdoors | 39.5 – 50.6<br>50.2 outdoors |
| Carbon dioxide (ppm) | 386 – 452 in<br>375 outdoors | 400 – 480<br>374 outdoors | 387- 420<br>377 outdoors | 378 – 431<br>362 outdoors |
| Carbon monoxide (ppm) | 2 – 3 in<br>4 outdoors | 2 – 3<br>1 outdoors | 1 –2<br>2 outdoors | 1 –2 in<br>2 outdoors |
| Respirable particulates ($\mu g/m^3$) | 35 – 47 in<br>45 outdoors | **61 – 84**[1]<br>**89 outdoors** | 36 – 50<br>42 outdoors | 36 – 62<br>50 outdoors |
| TVOC (ppm) | 0 | 0 | 0 | 0 |

The following 3 paragraphs are direct citations from the report

DISCUSSION

"Measurements of temperature, relative humidity, CO2, CO, respirable particulates and TVOCs were generally within the guideline ranges. Some respirable particulate readings were above the EPA standard of 65 $\mu g/m^3$. This standard is a 24-hour average, and ATC collected only instantaneous real-time readings. It must also be noted that all of these measurements were made in an unoccupied building. Only ATC personnel and custodial staff were present. All values would be expected to be different in a fully occupied building. Temperature, relative humidity, CO2 and respirable particulates may all be expected to increase to varying degrees when the school is occupied."

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[1] Here are the results in detail: outdoors: 86; room 501: 79; hallway by exit W: 80; 502: 85; hallway by bathroom: 82; girls bathroom: 81; hallway by exit E: 79; room 503: 68; hallway between 503 and 504: 84; room 504: 70; room 401: 75; hallway by exit W: 76; room 402: 73; hallway by bathroom: 73; room 403: 75; hallway betw. 403/404: 68; room 404: 61; hallway by stair E: 69; staircase: 76; cafeteria: 71; hallway by cafeteria/kitchen: 75; kitchen: 67; medical office: 75; classroom next to medical: 70; hallway by stair E: 75; hallway by bathroom: 73; library: 70; general office: 70; principal office: 61; classroom east: 73; main lobby: 70; outdoors: 89.

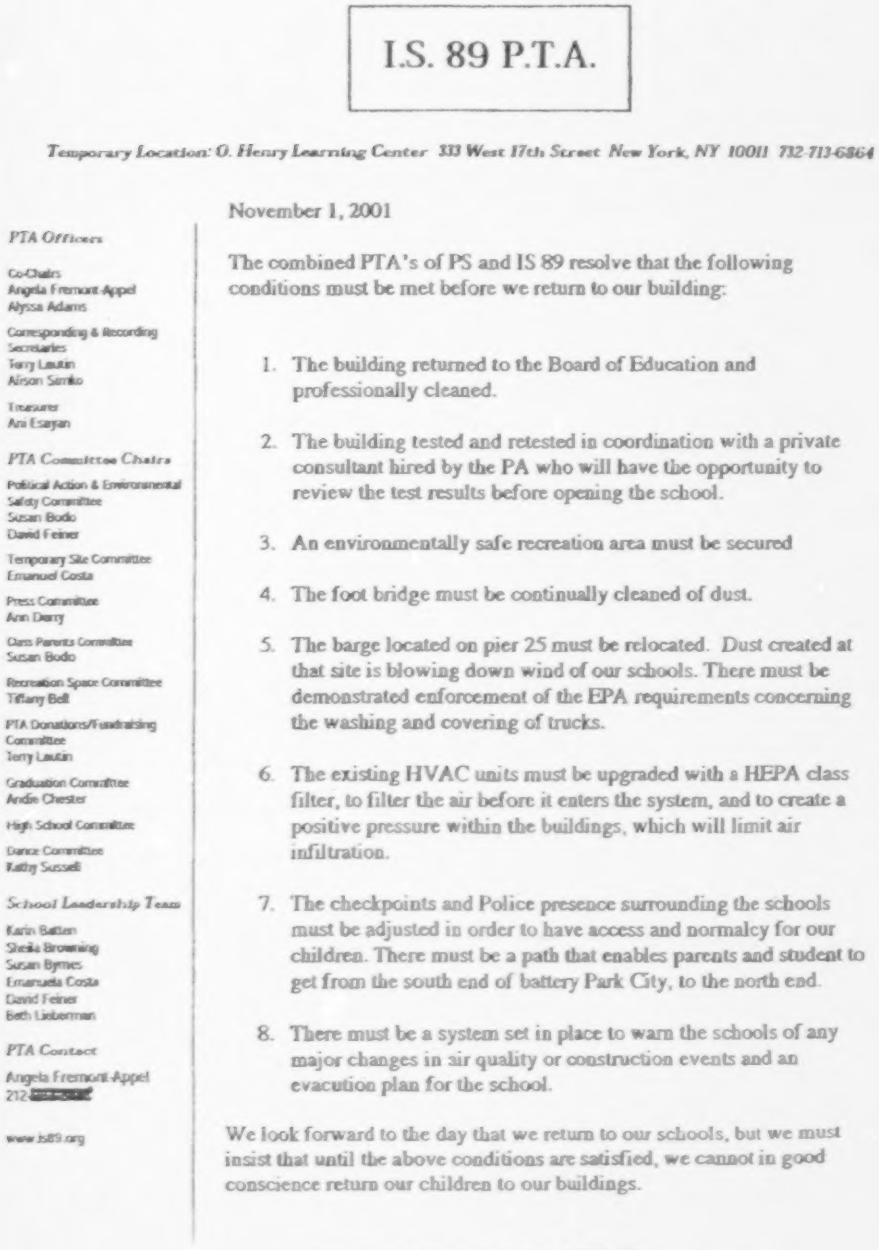
## OBSERVATIONS

During these assessments, ATC noted the following:
A thin layer of dust was observed on horizontal surfaces;
Custodial personnel were observed cleaning floors, doors and staircases;
No odors were detected in the building;
Windows in the building were sealed on the inside with plastic.

## CONCLUSION

Based on the result of the real-time measurements six IAQ parameters and the visual observations, ATC concludes that the air quality in the school is acceptable. This conclusion is contingent on receipt of acceptable results of the metal and hydrocarbon air samples. Limited additional IAQ measurements are advisable after the building is occupied."

# Parent Association (or PTA) Communications—I.S. 89



I.S. 89 P.T.A.

*Temporary Location: O. Henry Learning Center 333 West 17th Street New York, NY 10011 732-713-6864*

November 1, 2001

The combined PTA's of PS and IS 89 resolve that the following conditions must be met before we return to our building:

1. The building returned to the Board of Education and professionally cleaned.
2. The building tested and retested in coordination with a private consultant hired by the PA who will have the opportunity to review the test results before opening the school.
3. An environmentally safe recreation area must be secured
4. The foot bridge must be continually cleaned of dust.
5. The barge located on pier 25 must be relocated. Dust created at that site is blowing down wind of our schools. There must be demonstrated enforcement of the EPA requirements concerning the washing and covering of trucks.
6. The existing HVAC units must be upgraded with a HEPA class filter, to filter the air before it enters the system, and to create a positive pressure within the buildings, which will limit air infiltration.
7. The checkpoints and Police presence surrounding the schools must be adjusted in order to have access and normalcy for our children. There must be a path that enables parents and student to get from the south end of battery Park City, to the north end.
8. There must be a system set in place to warn the schools of any major changes in air quality or construction events and an evacution plan for the school.

We look forward to the day that we return to our schools, but we must insist that until the above conditions are satisfied, we cannot in good conscience return our children to our buildings.

*PTA Officers*

Co-Chairs
Angela Fremont-Appel
Alyssa Adams

Corresponding & Recording Secretaries
Terry Lautin
Alison Simko

Treasurer
Ani Esayan

*PTA Committee Chairs*

Political Action & Environmental Safety Committee
Susan Bodo
David Feiner

Temporary Site Committee
Emanuel Costa

Press Committee
Ann Derry

Class Parents Committee
Susan Bodo

Recreation Space Committee
Tiffany Bell

PTA Donations/Fundraising Committee
Terry Lautin

Graduation Committee
Andie Chester

High School Committee

Dance Committee
Kathy Sussell

*School Leadership Team*

Karin Batten
Sheila Browning
Susan Byrnes
Emanuela Costa
David Feiner
Beth Lieberman

*PTA Contact*

Angela Fremont-Appel
212-[redacted]

www.is89.org

# Cleanup and ventilation work completed at PS/IS 89 (Jan 15, 2002)

School Construction Authority oversees all cleanup and ventilation work at the school. BOE hired a set of certified, licensed environmental cleaning companies to clean the exterior, interior including furnishings and lockers and the HVAC systems.

## *Exterior of school completely cleaned*

All roof ballast (gravel) removed, underlying insulation removed from flat roof areas (late Nov). Removal and cleaning of all dust that may have been blown onto the roof and settled under the gravel and insulation. New roofing materials installed on flat roof areas (Dec).

Power washing of the complete exterior of building (Dec) – all walls, roofs, windows, ventilation intake areas, etc.

## *Playground disassembled and cleaned*

Preliminary power wash of play yard (early Dec). Full cleaning of play yard completed in late Dec. Includes removal and cleaning of all rubber mats, cleaning under mats, cleaning surfaces. Removed and replaced a layer of soil in the yard. Similar work done on the small roof courtyard outside the library.

## *Central HVAC systems environmentally cleaned and upgraded*

Ten central HVAC systems supply heat, ventilation, and air conditioning for the common areas, such as hallways, cafeteria, auditorium, gym, etc. All systems and ducts have been wiped and vacuumed (where reachable) and totally air-blasted and treated anti-bacterially (Dec).

New filter system was installed (Dec). Charcoal-activated 2"-wide pre-filters (Odor Guard III), designed to eliminate 87% of airborne particles larger than 1 micron, has been installed to pre-filter the outside air prior to entering the 10 central HVAC units. A 2"-wide after-filter, 4-ply pleated, has been installed immediately downstream of the pre-filters as the air enters the duct system. The net result will be the elimination of 90-93% of airborne particles larger than 1 micron. The charcoal-activated pre-filter will also eliminate odors and VOCs. (This new system was successfully tested late Dec.)

## *Unit ventilators in every classroom environmentally cleaned and upgraded*

Each classroom has 2 or 3 individual "incremental" ventilation units. Dismantled and cleaned all 93 units. Each univent was retrofitted from a 1" filter rack to a 2" filter rack to accommodate the Odor Guard III 2"-wide filter, thus providing the same filtration system as the central HVAC pre-filter. Tested 3 types of new filters (late Dec), and more lab tests are under discussion. Installed new "Odor-guard" filters (thicker than original) in all units (Dec/Jan).

## *Entire interior of school environmentally cleaned, including all contents*

Thorough pre-cleaning of interior as first phase (Dec). Wet-wiping surfaces, cleaning with HEPA vacuum. Final environmental cleaning was completed for interior spaces (such as classrooms, library, gym, auditorium, etc.), including contents (rugs, books, papers, etc.) (Jan). Additional custodial cleaning (Jan).

## *Testing will continue*

Daily air quality testing and monitoring inside and outside. Monitoring and testing of appropriate substances will continue, similar to what has been done at Stuyvesant.

## Synopsis of major steps in preparing PS/IS 89 for re-use as a school

**Week of 10/29/01**

11/01 First meeting of PS 89 Facilities Committee. 11/02 Meeting with Facilities Committee and the BOE. PS/IS 89 PTAs presented the BOE with an eight-point list of conditions and environmental concerns.

11/02 ATC (environmental testing company) conducts initial testing of dust inside and outside school and 6 soil samples from outside school for analysis of asbestos. Results (before any cleaning has been done): One soil/dust sample from the east side of the playground contained 2.3 percent asbestos, greater than the 1 percent threshold for an asbestos-containing material. Two other soil/dust samples contained traces of asbestos. The other three soil/dust samples were non-detect for asbestos.

Of the 33 bulk dust samples from inside the school (before cleaning), 17 samples contained no asbestos, while the remaining 16 samples contained asbestos ranging from trace level to 0.75 percent (.0075) asbestos; all were below the one percent threshold. Of the 39 settled dust samples, none were found contain measurable asbestos fibers.

**Week of 11/5/01**

11/05 ATC conducts air sampling for asbestos inside school. Results (before any cleaning): 21 of 25 samples contained no asbestos structures. Four samples contained one to two asbestos fibers, for an asbestos concentration of 22 to 44 structures/square millimeter. These samples were all less than the AHERA clearance level of 70 structures per square millimeter.

11/06 Environ submitted a proposal to the PS and IS 89 PTAs to consult with the BOE and the PTA on the clean up of the school facility.

11/08 Meeting with Facilities Committee and the BOE

Met with representatives of PS234's Facilities Committee to learn from their experiences with the consultant, the BOE and the clean-up process

**Week of 11/12/01**

11/14 Meeting with Facilities Committee and the BOE. Formed joint PTA Facilities Committee with IS 89. Joint committees met with the BOE to review progress. First opportunity to tour the school following its return to the BOE. Discussed plans for ongoing air quality and environmental testing, and monitoring of the environmental clean up, and the cleaning and upgrade of the HVAC systems.

**Week of 11/19/01**

11/19 Meeting with Facilities Committee and the BOE

All outside agencies have vacated the building. Cleaning of School Facility to begin. BOE hires environmental cleaning companies who will clean the exterior, interior including furnishings and lockers and the HVAC systems. School Construction Authority oversees all clean-up work at the school.

**Week of 11/26/01**

All roof ballast (gravel) removed, underlying insulation removed from flat roof areas. This allows for the removal and cleaning of all dust that may have been blown onto the roof and settled under the gravel and insulation.

**Week of 12/03/01**

12/04 Meeting with Facilities Committee and the BOE

Power washing of the exterior of building complete. Preliminary power wash of play yard. Cleaning all 10 central HVAC systems that supply heat, ventilation, and air conditioning for the common areas, such as hallways, cafeteria, etc. Complete cleaning of mechanical rooms (5th floor). Completed pre-cleaning (first phase) of interior spaces. Completed one round of air quality sampling. Ran HVAC systems for 12 hours with filters to collect dust, and then started final cleaning. Wet-wiped surfaces, cleaned with HEPA vacuum.

Will conduct aggressive air monitoring. Will disturb air, and monitor for contaminants. Will provide re-occupancy letter stating that building is safe for re-entry.

Tom Fusillo of Environ provides BOE with a list of substances to test for, very similar to the list prepared for PS 234. For air: volatile organic compounds, PCBs, polycyclic aromatic hydrocarbons, asbestos, dioxins and dibenzofurans, particulates (PM2.5), hydrogen sulfide, nitrous oxides, sulfur dioxide, carbon dioxide, carbon monoxide. For surfaces: PAHs (Polynuclear Aromatic Hydrocarbons), PCBs, metals, dioxins and dibenzofurans, asbestos.

**Week of 12/10/01**

12/11 PTA voted to approve contract with Environ. Their representative will consult with and advise the PTA on matters relating to the environmental clean up of the school facility and site.

12/11. Collection of six bulk dust samples from the "univents" (unit ventilators). Results (before cleaning): Two samples contained trace levels of asbestos and four samples contained no detectable asbestos.

12/13 Meeting with Facilities Committee and the BOE

New roofing materials installed on flat roof areas.

Robert Cascone, P.E. of Burns & Roe reported work began on installation of new filters for the central HVAC systems (10). Charcoal-activated 2"-wide pre-filters (Odor Guard III), designed to eliminate 87% of airborne particles larger than 1 micron, will be used to pre-filter the outside air prior to entering the 10 central HVAC units. A 2"-wide after-filter, 4-ply pleated, is being installed immediately downstream of the pre-filters as the air enters the duct system. The net result will be the elimination of 90-93% of airborne particles larger than 1 micron. The charcoal-activated pre-filter will also eliminate odors and VOCs. (This system was successfully tested over the Christmas/New Year Holiday week).

12/15 and 16 Air quality sampling was conducted. Air quality sampling was performed for all parameters requested by Environ, the PTA environmental consultant. This air quality sampling was performed prior to final cleaning of the school and is considered to be a "worst case scenario" air testing.

Dismantling and cleaning of all 93 "incremental" classroom univents begun. (Each classroom has 2 or 3 individual univents.) Each univent was retrofitted from a 1" filter rack to a 2" filter rack to accommodate the Odor Guard III 2"-wide filter, thus providing the same filtration system proposed for the central systems pre-filter type.

Note: Mechanical Engineer hired by the BOE, Robert Cascone, P.E. of Burns & Roe explains that HEPA filters are intended for use in a "Clean Room", such as a hospital operating room. The air handling systems at the school cannot use HEPA filters (rated for 0.3 microns at 99.9% efficiency), but the proposed filter retrofitting is a practical way to vastly improve filtration in the HVAC system. In the central systems, filtration is increased from 40% at 1 micron to 90-93%, and in the univents from 40% at 1 micron to 87%. The Odor Guard III has a high charcoal content to remove odors and VOCs.

**Week of 12/17/01**

12/19 Meeting with Facilities Committee and the BOE.

BOE agreed to hire a permanent custodian to maintain ventilation system and filter replacements.

12/19 Samples taken of floor tiles and ceiling tiles were found to be free of asbestos.

Tom Fusillo notes the current method used to test for microscopic dust particles may yield false high readings. He recommends an alternative device be used. The testing/monitoring firm ATC Associates inc. representative, Andreas Andreou has ordered the new device.

Psychological group met with District 2 representatives. Discussion about implementing and improving and psychological plans for parents, teachers, and children.

All ducts have been vacuumed and cleaned. Central HVAC system cleaned - wiped and vacuumed

**Week of 12/24/01**

As a test, four types of HVAC filters are installed in 4 classrooms in the incremental units. (Protocol was decided at a meeting with representatives of PTA, UFT, NYC-BOE, ENVIRON, ATC Associates, Inc., Burns & Roe, and Environmental Dynamics Corp.) Two types of odor-guard filters with activated charcoal, an electrostatic filter, and the original blue filters are tested. An air quality particulates test will compare them against each other (and against the original univent filter). Testing is to be performed for 1 week from December 29 through January 5. ATC Associates, Inc. set up PM2.5 sampling devices (Dust-Trak®) to continuously monitoring these four classrooms for one week. (Test results showed low particulate counts by all filters, and no significant difference among them.)

Cleaning of play "yard" completed. (Includes removal and cleaning of rubber mats, cleaning under mats, cleaning surfaces, and removal and replacement of a layer of soil)

**Week of 12/31/01**

Environmental cleaning is scheduled for interior spaces (such as classrooms, library, etc.), including contents. To be performed by School Construction Authority contractors.

1/3 Meeting of psychological group with teachers, administrators, and St Vincent's to brainstorm, develop, and improve a set of psychological plans for parents, teachers, children, and administrators. St. Vincent's responsible for producing compiled plan.

**Week of 1/07/02**

Preliminary air quality and wipe test results of 12/19 and 12/20 were sent to Environ for review.

The filters will be run, and the spaces will be tested for contaminants in the air.

1/8. Meeting at St. Vincent's for all parents and teachers. Overview of psychological plan.

1/10 committee meeting to review St Vincent's draft psychological action plans. Separate additional meetings are planned for teachers and staff (Jan 17), parents (Jan 24), and children (Feb 1).

1/11 Additional testing of materials, as agreed to by Environ, BOE, ATC, and other consultants.

- Three (3) VOC and silica air samples, two indoor and one outdoors (playground);
- Three (3) metal wipe samples from the playground;
- Four (4) indoor PM2.5 samples using the newly acquired gravimetric samplers and Dust-Trak®;
- Two (2) ambient area air samples collected outdoors from each end of the playground and analyzed for asbestos content;
- Direct readings for CO, $CO_2$, respirable particulates, relative humidity, temperature and $NO_2$;
- Dust wipes throughout the school building to be analyzed for lead content;
- Settled dust bulk samples from the playground and soil to be analyzed for asbestos content;
- Five (5) dust samples from student backpacks;
- If there is enough dust, collect bulk samples to be analyzed for fiberglass content.

(1/15 Lab results show no asbestos, fiberglass fibers or lead in the samples.)

**Week of 1/14/02**

**All environmental cleaning and ventilation upgrade was completed by January 14. Re-occupancy permit was granted.** The facility is ready for all activities, including meetings and visits by teachers, parents, and children. The classrooms will be ready for moving and use. (IS 89 teachers begin to move later this week.)

Continue air quality monitoring.

1/14 Meeting with Facilities Committee and BOE.

1/15 Meeting for teachers with Environ, environmental consultant.

1/17 Tour of school facility for teachers and staff. Led in conjunction with St Vincent's psych and counseling staff.

**Week of 1/21/02**

Monitoring and testing of air quality will continue to ensure safe conditions.

1/24 Tour of school facility for parents. St Vincent's staff will be present.

2/1 Open house/celebration for parents and children.

**Longer term**
Daily air quality testing and monitoring inside and outside. Monitoring and testing of appropriate substances will continue, similar to what has been done at Stuyvesant.

********************************************

Synopsis prepared by Kevin Crawford, John Chow (members of the PS 89 Facilities Committee), January 15, 2002, with assistance from Tom Fusillo of Environ (PS/IS 89 environmental consultant) and input from BOE consultants. We gave copies to the Board of Education and their consultants for review.

# Parent Association (or PTA) Communications—High School of Economics and Finance

EMTEQUE

RECEIVED
MAR 04 2002
HUMAN RESOURCES

February 25, 2002

Ms. Carol Cantrell
PTA – President
High School of Economics & Finance
100 Trinity Place
New York, NY 10006

Re: Environmental Clean-up, 100 Trinity Place
EMTEQUE Corporation Project No. 02010126

Dear Ms. Cantrell;

As you know, a decision was reached earlier in the month by all parties involved at the above referenced site, to proceed with the replacement of the acoustical ceiling tile system in all locations in which a drop ceiling was pre-existing. Following the replacement of new ceiling systems, air sampling would be performed and air samples analyzed via Transmission Electron Microscopy (TEM). The details of this program are described in the attached Scope of Work dated February 8, 2002 as prepared by ATC Associates, Inc. These procedures were developed based on input ATC Associates received from both EMTEQUE Corporation and the United Federation of Teachers (UFT).

At the completion of the clean up of each of the areas, an inspection was performed by EMTEQUE Corporation, as well as the other consultants, and was performed prior to air sampling by ATC Associates.

Inspections were performed by EMTEQUE Corporation on the following dates and were restricted to those areas in which ceilings had been removed and replaced:

February 12, 2002 – 9th floor
February 14, 2002 – 8th floor
February 22, 2002- floors Basement through 7

Air sample results submitted by ATC Associates, Inc. revealed acceptable airborne fiber concentrations in all locations sampled. Asbestos fibers were not detected in any of the samples collected following the ceiling replacement program. I have also included air sampling data obtain from Taylor Environmental for floors ground through the 7th floor, which document similar results to those obtained by ATC.

Ceiling tile systems were not reinstalled on the 10th floor, since reconstruction (renovation) activities are currently planned for this floor.

505 Eighth Avenue • Suite 900 • New York, NY 10018
Phone: 212-631-9000 • Fax: 212-631-8066 • E-mail: info@emteque.com

As you may recall, our primary concern pertained to the presence of "suspect" dust in the ceiling plenum, which had not been cleaned. With the replacement of the drop ceiling systems, this issue has been addressed. It is our understanding, through conversations with ATC Associates, Inc., that access to the areas above plaster ceilings will be restricted.

With respect to the water quality issues, it is our understanding that bottled water (dispensers) has been provided for use by the students and faculty and should be used in the cafeteria. Provisions will be made for the faculty and staff with respect personal hygiene. It is our understanding that the water samples collected are acceptable for primary contaminants and the only issue which is not acceptable, is turbidity, which affects the appearance and is a secondary contaminant and therefore not federally regulated. I am assuming that these measures will be implemented until the color clears up, at which point, we would expect another round of water sampling to be performed to address, both primary and secondary contaminants.

It is also our understanding that ATC Associates, Inc. will continue to perform periodic Indoor Air Quality investigations as detailed in the attached protocol for the Indoor Air Quality Investigation. I have been informed that the air sampling for various contaminants will be performed on a weekly basis and that the use of "direct read" instrumentation for such contaminants as Carbon Monoxide, Carbon Dioxide, etc. will be performed daily. The protocol, as prepared, addresses our concerns and presumably the concerns of the parents and faculty.

On the basis of the material we have reviewed and the site inspections performed, re-occupancy of the facility is recommended.

Each of the documents referenced in this correspondence is attached. Should you have any questions or require additional clarification, please feel free to contact me at your earliest convenience.

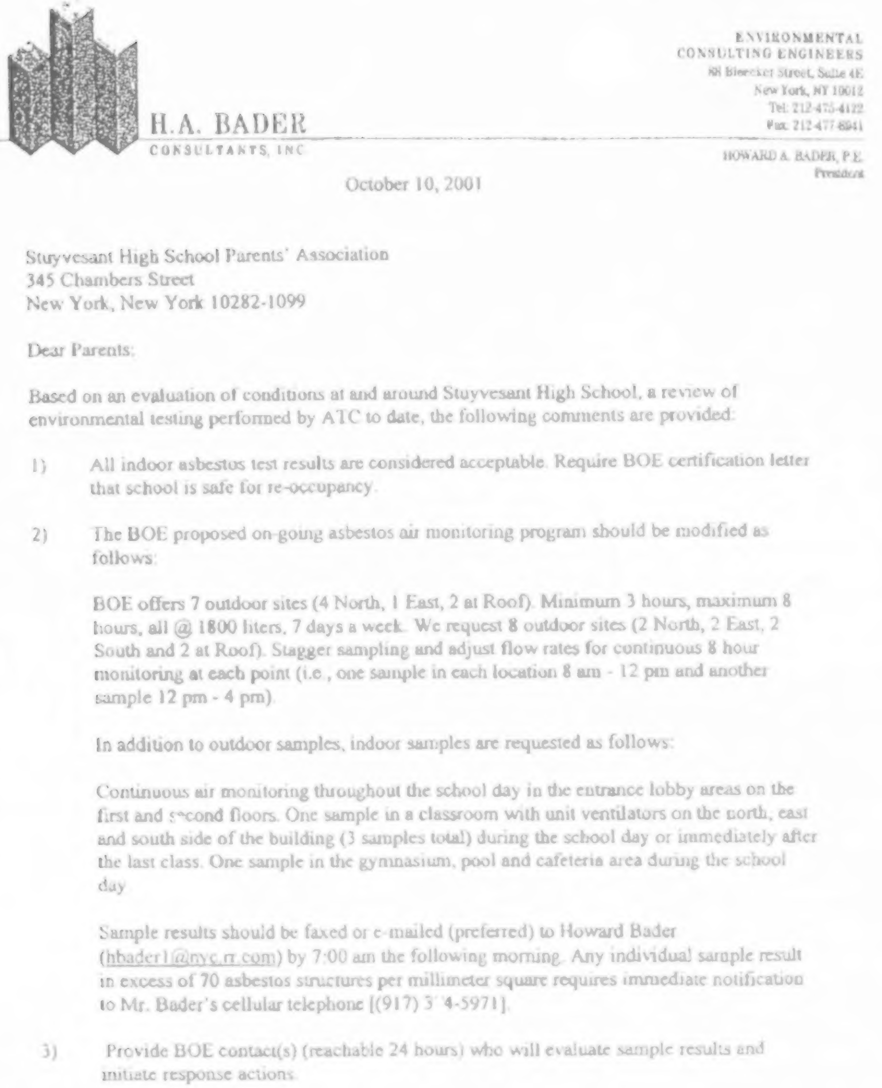
Sincerely,

Eric Telemaque
President

Cc: P. Frankfort
P. Burke
Files

L1-2-25-02E

# Parent Association (or PTA) Communications—Stuyvesant High School and 721M



H.A. BADER
CONSULTANTS, INC.

ENVIRONMENTAL
CONSULTING ENGINEERS
88 Bleecker Street, Suite 4E
New York, NY 10012
Tel: 212-475-4122
Fax: 212-477-8941

HOWARD A. BADER, P.E.
President

October 10, 2001

Stuyvesant High School Parents' Association
345 Chambers Street
New York, New York 10282-1099

Dear Parents:

Based on an evaluation of conditions at and around Stuyvesant High School, a review of environmental testing performed by ATC to date, the following comments are provided:

1) All indoor asbestos test results are considered acceptable. Require BOE certification letter that school is safe for re-occupancy.

2) The BOE proposed on-going asbestos air monitoring program should be modified as follows:

   BOE offers 7 outdoor sites (4 North, 1 East, 2 at Roof). Minimum 3 hours, maximum 8 hours, all @ 1800 liters, 7 days a week. We request 8 outdoor sites (2 North, 2 East, 2 South and 2 at Roof). Stagger sampling and adjust flow rates for continuous 8 hour monitoring at each point (i.e., one sample in each location 8 am - 12 pm and another sample 12 pm - 4 pm).

   In addition to outdoor samples, indoor samples are requested as follows:

   Continuous air monitoring throughout the school day in the entrance lobby areas on the first and second floors. One sample in a classroom with unit ventilators on the north, east and south side of the building (3 samples total) during the school day or immediately after the last class. One sample in the gymnasium, pool and cafeteria area during the school day

   Sample results should be faxed or e-mailed (preferred) to Howard Bader (hbader1@nyc.rr.com) by 7:00 am the following morning. Any individual sample result in excess of 70 asbestos structures per millimeter square requires immediate notification to Mr. Bader's cellular telephone [(917) 3[illegible]4-5971].

3) Provide BOE contact(s) (reachable 24 hours) who will evaluate sample results and initiate response actions.

4) Does the BOE have a plan to issue particulate masks to building occupants.

5) In response to parent concerns, once per week (preferably on Wednesday), the following indoor sampling shall be performed during regular school hours (dust samples can be taken off-hours):

Settled Fiberglass (PLM point count analysis)
Lead Surface Dust (FAA analysis)
Silica (XRD)
Fine Particulate Matter (PM 2.5)

Samples locations identical to indoor asbestos test sites. Sample results faxed or e-mailed (preferred) to Howard Bader within 24 hours.

6) HVAC systems (central air handlers and unit ventilators) shall operate on minimum outdoor air. Unit ventilators can increase outdoor air quantities as required by the automatic temperature control system to maintain comfortable temperature. Damper settings should be re-evaluated weekly to minimize contaminant entry and still maintain acceptable indoor air quality. Provide detailed procedures, any changes from procedures requires notification to Parents' Association.

7) If unsafe or objectionable outdoor contaminants and/or odors occur, the School must be capable of quickly closing all HVAC outdoor air intakes and/or unit shutdown (preferably at a central location). Who will make this decision? Provide detailed written procedures as to how this will be executed.

8) Pleated filters with highest efficiency possible (per manufacturer, minimum 30% Dust Spot Efficiency) should be used in all HVAC equipment. Until pleated filters can be installed, roll media filtration shall be placed at unit ventilator discharge grilles. Provide filter change and inspection schedule (request bi-weekly inspection and monthly change).

9) Provide documentation from BOE and cleaning contractor that Chambers Street Bridge was thoroughly cleaned (including structure, ceiling and windows).

10) Provide written procedure from governing authority describing cleaning of Chambers Street sidewalks and bridge over West Street (continuous cleaning as required by physical conditions). Bridge shall be HEPA vacuumed and wet cleaned several times a day. Cleaning schedule and procedures shall be re-evaluated weekly.

11) Request wet cleaning of school entrance lobbies, minimum twice per day (after 2nd period and at days end).

12) Provide written procedure from governing authority describing dust control strategy for removal of debris from WTC site and transfer to barges north of school property.

Sincerely,

Howard A. Bader, P.E.
President

**BOARD OF EDUCATION OF THE CITY OF NEW YORK**
HAROLD O. LEVY, *Chancellor*

OFFICE OF THE CHANCELLOR
110 LIVINGSTON STREET · BROOKLYN, NY 11201

February 7, 2002

Dear Parents and Staff of Stuyvesant High School:

I write to you today to express my grave disappointment with a recent communication sent to you from the Stuyvesant Parents' Association's Environmental Health and Safety Committee (the "PA"), dated February 4, 2002.

Before I address the "substance" of the February 4th report, I want to report to you what we've been doing to ensure that Stuyvesant High School ("Stuyvesant") and other downtown schools near the site of the World Trade center remain safe, secure learning environments:

- We hired a world-class engineering consultant, Burns & Roe, to help us to accomplish the best possible retrofit of Stuyvesant's air handling/ventilation system. The system is now operating with the highest efficiency filtration system that is possible given its configuration and operating specifications. Standard measurements of air quality inside the school have been well within acceptable limits since the air handling and ventilation systems were retrofitted.
- We continue to work with doctors trained in pediatric health and environmental and occupational safety from the NYU Medical Center/Mt. Sinai Medical Center healthcare network. These doctors have examined air quality data and reviewed the work we have done at Stuyvesant to clean the school. They assure us, unequivocally, that Stuyvesant and other downtown schools are clean and safe for both children and adults.
- Air quality measurements that our consultants have done at other locations in New York City demonstrate that air quality in and around Stuyvesant High School is now consistent with, if not better, than other areas throughout New York City. The recent findings of occasionally elevated levels of dust represent common background readings from the urban community, not an unusual health hazard.

The February 4th report provided to parents from the PA contains numerous inaccuracies and misstates the plain meaning of a large amount of environmental testing data available since the high school was reopened on October 9, 2001. I can only conclude, from the report's use of sensationalistic language (e.g., "diesel fumes are carcinogenic") that the intent of this report is not to provide parents with useful information, but rather, to cause further stress and divisiveness to the Stuyvesant community and to damage the school's mission for educational excellence. I address each of the PA report's assertions, by section, below:

"We Are Concerned." As I stated in a recent letter to the PA's Executive Board, air quality at Stuyvesant is well within acceptable levels according to Federal air quality standards. Last month, the Board completed a retrofit of the school's air handling and ventilation systems as designed by our consultant, Burns & Roe. The report omits the fact that since the fall of last year, the outside air environment around the school has improved dramatically, primarily due to the cessation of fires in the area. Since December 15th, with the exception of a small number of days, outside air quality readings also have been well below recommended levels for long-term exposure. Air monitoring data, which is continuously provided to the Stuyvesant PA, continues to indicate that the air filtration and ventilation systems in place at Stuyvesant are doing their job exceedingly well. Finally, the report matter-of-factly claims that "diesel fumes are carcinogenic," without mentioning that such fumes are ubiquitous in the urban environment nor does the report present any evidence or exposure data to support these specious claims.

"School Ventilation is Not Adequate." The report fails to mention that the school's ventilation systems were retrofitted according to the best retrofit possible, and employing the most efficient of four filters tested, last month. This omission is an attempt to mislead the parent body and professional staff of Stuyvesant. Since this system retrofit was completed last month, air quality at the school has been excellent, according to air quality tests performed at the school each day. The report then tries to compare Stuyvesant's air handling systems to a totally different kind of system in use near the school at the Borough of Manhattan Community College, without stressing that the two systems were built by different contractors and designed for different kinds of buildings. It also misrepresents the extent of disruption to the learning environment it would take to remove completely the current HVAC system at Stuyvesant and to replace it with one in use at BMCC and the minimal improvement, if any, to air quality that would be provided.

"Stuyvesant Needs New Ventilation Systems." The report suggests that HEPA filters would be the best solution and then claims that the current HVAC system is substandard. On both points, the plain facts do not support these statements. Stuyvesant's HVAC system, which is part of a superior, $200 million facility, is only ten years old (far from old when looking at the average age of other school buildings in New York City), and does provide for a more than adequate internal air environment for the school. With respect to HEPA filters, the PA's Environmental Health and Safety Committee knows that HEPA filtration is designed for localized settings such as hospital operating rooms. The Board is unaware of it ever having been employed throughout a building as large as Stuyvesant. Our engineering firm, Burns & Roe, advised us that it would be near to impossible to retrofit the building's current HVAC system to accommodate HEPA filtration. Instead, an entirely new system would have to be installed—a process that would take between 12-24 months and entail a disruptive construction process throughout the school. Burns & Roe has worked extensively with us to accomplish a retrofit that provides the highest efficiency air filtration given the current system. Further, we learned that the President of the Parents' Association discussed with the Robin Hood Foundation this same "HEPA Proposal," seeking funds for its installation. They too declined to proceed because the project was deemed impractical. Yet, this report does not include that valuable information.

"Contaminants Continue to Enter Stuyvesant" The report mentions Board of Education environmental sampling results, which represent about $30,000 per week in expenses at Stuyvesant alone, without providing the benefit of a full explanation. The EPA standard for long-term exposure to "respirable particulates," what we call dust, applicable to "sensitive" individuals is 40 micrograms per cubic meter of air. Sensitive individuals are persons with asthma or other acute respiratory conditions. The air monitoring standard applicable to those not in the sensitive category is 65 micrograms per cubic meter. Our consultant takes over one hundred air quality readings a day at Stuyvesant (including during times when the school is closed). On only two days since December 15th were there any readings from within the school that exceeded the "sensitive" standard of 40 discussed above, and on only one of those days did any readings exceed the higher standard of 65 discussed above. Further, since December 15, on every day except January 15th and 28th, there have been no readings within Stuyvesant exceeding 40. The instantaneous readings on occasional and increasingly rare days do not pose a health risk. The EPA's air monitoring standards are determined based on 24-hour averages for conditions that are present for long periods (10 to 20 years). The report also sensationalizes the presence of lead on surfaces at the school, which was discovered twice as a result of our ongoing rigorous testing. These areas were immediately cleaned following the discovery. Further, the report fails to mention that while lead can cause several adverse health effects, these are usually from prolonged exposure to the dust from the metal, or when children consume lead-based paint. Again, the intent here is not to inform parents, but to create worry and stress where none is warranted.

"The Barge Operation Continues To Emit Contaminants." Chancellor Levy has made several requests, first to Mayor Giuliani, then to Mayor Bloomberg, for a rigorous effort to minimize dust from the barge operations north of the school. The Board of Education has no authority over either barge traffic in the Hudson River or where such barges are located. We have never disputed the PA's concern that barge traffic as well as the presence of the barge north of Stuyvesant is not conducive to good air quality outside of the school. In this section the report also mentions the extremely rare occurrences of excessive levels of certain contaminants in the air outside of the school without stressing that known adverse health effects from these contaminants are generally the result of prolonged, occupational-type exposure to these chemicals and substances. Again, the report relies on merely reporting the most acute health effects of contaminants without explaining fully what is known about under what conditions they pose a threat to humans.

"Limitations on Environmental Sampling." Lacking an evidentiary foundation with which to make a claim of an adverse air environment, the report then tries to attack the methods of testing. The Stuyvesant PA and their environmental consultant participated in a full review of, and approved the testing protocols for contaminants at Stuyvesant before they were implemented. In fact, we have altered the testing protocols for Stuyvesant on several occasions in response to the Stuyvesant PA's requests. Thus, whatever misgivings the Stuyvesant PA may now claim to have about how the Board is testing the internal and external environment at Stuyvesant (including what kinds of contaminants are being monitored), it also must take responsibility for. The Board gave the PA wide latitude in determining these protocols, and we are fully comfortable that they are more than adequate to determine whether we are providing a safe learning environment for children. The environmental experts for the United Federation of Teachers (UFT) as well as the PA's of other downtown schools we are working with also are in agreement with this positive assessment.

"Incidents of Illness Among Students and Staff" The report uses anecdotal evidence to suggest that there are greater incidents of illnesses among students and staff. There may be increased incidents to a limited extent but we believe the events of September 11th and its emotional aftermath have contributed to a number of these incidents. The most comprehensive epidemiological study of these claims of greater illness has not been released by the City Department of Health. Therefore, we find it premature to make such claims. Attendance at Stuyvesant since October 9th has consistently remained well above 95% (consistent with the school's historical attendance figures, and well above the City average for high schools), indicating that there are no large-scale sicknesses or illnesses at the school that the report clearly takes pains to suggest. The report also makes mention of a condition, known as "chemical bronchitis," that is not known among the medical community. The report fabricates a medical diagnosis for the benefit of sensationalism. Moreover, the report suggests that the Centers for Disease Control (CDC) recently began fuller study of the living environment downtown simply because of conditions at Stuyvesant. This is simply untrue. The study, which we support, was begun in response to the concerns voiced by a wide array of people who work and live downtown. It has not been suggested by the CDC that conditions at Stuyvesant are bad enough to warrant a Federal study. Finally, the report also quotes the affidavits of two doctors who supported a lawsuit by some parents at PS 89, less than one block from Stuyvesant, to keep their school closed because of health concerns. Two days ago, those parents voluntarily withdrew their lawsuit from Manhattan Supreme Court against the Board of Education. The physicians we are working with at NYU/Mt. Sinai and the environmental experts for the UFT uniformly reject the positions taken by those doctors cited in PS 89's lawsuit.

"Greater National Concern" and "Immediate Action is Needed". The report concludes by urging parents to advocate for certain improvements to the Stuyvesant facility, such as implementing a HEPA filtration system. I again want to stress to you that the Board has already implemented the most effective ventilation and filtration systems at Stuyvesant as designed by our engineering firm, Burns & Roe. This redesigned system, the result of careful research and testing by our consultant, has greatly improved air quality at the school. The air quality inside of Stuyvesant has been excellent particularly since mid-December and especially since the retrofit completed in mid-January, and any reference to dates prior to then is irrelevant looking forward. I regret that the PA's report leaves the impression that the Board of Education has not done everything, nor investigated the best and most feasible possibilities with respect to HVAC upgrades, to ensure the health and safety of Stuyvesant's students and staff. Indeed, the Board's concern has been to ensure that Stuyvesant remains a high-functioning learning environment and a place of educational excellence on a national level.

The Board of Education have never stopped working toward providing the Stuyvesant community with the tools to make the school a safe and secure learning environment

Very truly yours,

David Klasfeld
David Klasfeld
Deputy Chancellor

STUYVESANT HIGH SCHOOL PARENTS' ASSOCIATION

# Letter from Marilena Christodoulou, President of the Parents Assocaition - February 25, 2002

Dear Parents

This letter is being written in an attempt to answer questions that have been posed by parents as well as clarify the PA's position on environmental conditions in and around the school.

Since September 11, the PA Executive Board, the Political, Social, and Legal Action Committee, the Environmental, Health & Safety Committee (EHSC), and numerous parent volunteers have worked diligently to protect the health and safety of the students and staff at Stuyvesant. Much has been achieved as a result of the PA's efforts:

- an asbestos abatement cleanup at the school (except the ventilation ducts)
- regular environmental sampling inside and outside the school.
- upgraded filters in the ventilation system of a 40% efficiency rating at one micron (only at the end of January, 4 months after our children moved back). These filters still do not adequately protect against contaminants. More protective filters of at least 90-95% efficiency rating are needed.

For more details, we refer you to the EHSC's Report of February 4 and EHSC's Response to the February 7 letter of Deputy Chancellor Klasfeld, on our website at www.stuypa.org.

Unfortunately, the Board of Education (BOE) has introduced a high level of politics and divisiveness in this process, including personal attacks against the PA leadership and covert communications with certain members of the PA Executive Board. Recently, parents have received several letters from Deputy Chancellor Klasfeld trying to discredit the PA Environmental Health & Safety Committee reports and to reassure parents that the environment inside and outside the school is unequivocally safe. As a result, we are forced to spend our time and energy opposing the position of the BOE, instead of working collaboratively with them for the benefit of our children.

The post-September 11 environment is of an unprecedented and unknown nature, especially as it relates to the health and safety of our children. Having listened to respected experts' opinions over the past five months, our conclusion is that the environmental safety of Lower Manhattan is still very much in debate. Meanwhile, while this debate is going on, many parents report to us that their children are experiencing unusual rashes, nosebleeds, coughing attacks, and chronic sinus and respiratory problems.

We have been asking the BOE to take prudent, precautionary measures to protect our children. These measures are reasonable and consistent with actions taken by other buildings in the area:

1. Clean the ventilation system ductwork (Estimated cost: $50-100,000; Estimated time: 7 days)
2. Upgrade the ventilation systems to accommodate 90-95% minimum efficiency filtration (Estimated cost: $1.6 million; Estimated time: 2 months if school is vacant, 4 months if school is occupied and work is done nights plus weekends).
3. Take effective action to cause the City to relocate the truck and barge operations away from the school.

These measures are not only important for the short-term until the WTC recovery operations are completed, but also for the next 5-7 years of redevelopment of Lower Manhattan. We understand that City agencies are considering keeping the barge next to Stuyvesant during the years of construction ahead. Additionally, the N.Y. State Department of Environmental Conservation has requested that Congress waive the Clean Air Act requirements in Lower Manhattan during the construction period. This would result in diesel emissions and combustion by-product pollution next to the school at higher levels than prior to September 11.

To-date, the Board of Education refuses to clean the ducts, refuses to upgrade the ventilation systems' filtration, and refuses to take any effective action on the barge relocation. To date, public agencies have refused to relocate the barge.

Once again, we have to consider both sides of the environmental debate on air quality as it relates to the inside of the school and the outdoor environment:

**Indoor Air Quality**:
The BOE's position is unequivocal. BOE's consultant, Dr. Philip Landrigan, is confident "that the indoor environment at the school is clean and safe" (see Dr. Landrigan's letter of February 20 to parents).

Dr. David Carpenter, the Director of the Institute for Health and the Environment at the University at Albany, State University of N.Y., and a Director of Healthy Schools Network, believes that "the [school] building has not yet been proven safe". Attached hereto is Dr. Carpenter's letter in which he also states that " the new filtering system in place does not protect the indoor air", and expresses his concern about the elevated lead levels inside the school and the proximity of the barges and trucks.

**Outdoor Air Quality**:
Most scientists agree that, since most of the WTC fires are out, the outdoor air quality in Lower Manhattan has improved. Most of them also agree that the outdoor environmental quality continues to be unpredictable. Also, as reported by the Natural Resources Defense Council in the first comprehensive report on post-9/11 air quality, there are still 3 "hotspots" of hazardous environmental quality: Ground Zero, the Barge operation on Pier 25, and the vicinity of the diesel-powered trucks and construction equipment. Unfortunately, Stuyvesant is located right next to 2 out of these 3 hotspots.

BOE's consultant, Dr. Landrigan, agrees with this assessment. At Senator Clinton's Senate hearings on February 11, Dr. Landrigan supported my testimony that the trucks and barge constitute an unacceptable risk to our children. He testified "I've been down there. I have seen those trucks go by inadequately covered. I certainly would not want any of my grandchildren to be out there". His letter of February 20 to the Stuyvesant parents is contradictory to his testimony.

As to the quote from the DELTA Group [for Detection and Evaluation of Long-range Transport of Aerosols, at University of California at Davis] report used by Deputy Chancellor Klasfeld in his letter of February 21, the quote is out of context and misleading. The complete quote is as follows: "All evidence indicates that ambient air in New York City now is little influenced by the World Trade Center collapse, especially since the fires are out and the debris pile has cooled. However, the presence of large amounts of very fine particles as late as October means that indoor cleanup should be done carefully, Cahill said. Very fine particles will have penetrated crevices and fabrics in a way normal dust doesn't. And they are easily re-suspended, which re-exposes the room's occupants to them".

Furthermore, at the February 25 EPA National Ombudsman Investigative Hearings hosted by Congressman Nadler, Dr. Cahill, the senior scientist of the DELTA Group and an international authority on the constituents and transport of airborne particles, testified that the EPA had not tested for very fine particles, considered to be much more dangerous to human health, and could not declare the air safe. Dr. Cahill also testified that he could not say whether the air is safe today. The BOE has not tested Stuyvesant for these very fine particles.

**Incidence of Illness**:
As you may remember, after students and faculty reported symptoms of illness, parents received a letter from Principal Teitel dated October 18, stating, " Epidemiologists from the Department of Health will further investigate the cause of symptoms." In his letter of February 7 to parents and staff, Deputy Chancellor Klasfeld states "The most comprehensive epidemiological study ofÖclaims of greater illness (among students and staff) has not been released by the City Department of HealthÖ There are no large scale sicknesses or illness at the school".

The facts are: No epidemiological study of Stuyvesant students has been conducted. No parents have been asked for consent for the participation of their children, as required for a study. No interviews have been conducted. No surveys have been distributed. Statistics derived from numbers of absences or numbers of visits to the school nurse are not reliable indicators of the incidence of symptoms of illness among students.

At Senator Clinton's Hearings, BOE consultant Dr. Philip Landrigan endorsed my testimony about the lack of any epidemiological or other serious study at Stuyvesant. He testified "I agree with what Mrs. Christodoulou said. To my knowledge, there has been no organized efforts to do systematic surveys of respiratory health problems, Öor other health problems in children. I think this is a serious need that needs to be met".

In an effort to determine the extent of illness among students, the PA's EHSC has developed the enclosed Confidential Questionnaire. We would appreciate your completing it and returning it to us. We have asked Senator Clinton to include students in her plan to track incidence of illness and for the Government to assume responsibility for early detection and treatment of illness related to the WTC disaster. Irrespective of incidences of short-term health effects on our children, we are especially concerned about the long-term health effects, which are harder to ascertain at this time.

**PA's Efforts**:
Our efforts to date to cause the BOE to take action on our requests, including having the barge operation relocated, and our efforts to cause Government agencies to have the barge relocated, include the following:

- Numerous meetings and communications between representatives of the PA Executive Board, the PA EHSC and the BOE from mid-September until mid-November, at which time the BOE refused to meet with us any more (Deputy Chancellor Klasfeld invited us to a meeting on February 11 only after he learned that the PA was considering litigation).
- Communication with the United Federation of Teachers (UFT) and our local chapter, and coordination efforts.
- PA representatives made a presentation at the BOE Public Agenda Meeting, attended by Members of the Board of the BOE. Also, private meetings were held with certain BOE Board members.
- Continuous involvement of the PA's expert, Howard Bader, along with UFT experts, in cleanup, testing, and remedial actions by BOE and their consultants.
- Monitoring and posting of environmental testing results at the school by the PA EHSC. Also, monitoring of EPA testing results.
- Notification by EPA to PA President of any elevated levels of contaminants at EPA monitoring station at the barge. This is how the PA learned of the asbestos, tetrachloroethane, and isocyanate contamination next to the school's north side..
- Consultations with scientists, physicians, and environmentalists, including physicians at Mt. Sinai, NYU, and SUNY hospitals, physicians at the Centers for Disease Control's National Institute of Occupational Safety & Health, scientists at NYU and Columbia University, environmentalists at Natural Resources Defense Council, Healthy Schools Network, and others.
- PA President, PA Expert, and PA members have testified at several City Council and EPA hearings. PA President also testified at State Assembly and U.S. Senate hearings.
- Employed several professional ventilation engineering firms, including the original designer of the school's ventilation system. They all agree that the ventilation system needs to be upgraded.
- We are seeking to obtain funding for the upgrade of the ventilation systems from sources outside the BOE, and have submitted so far applications to the 9/11 Fund and to a private foundation.
- Numerous meetings and communications with government agencies, EPA, DEP, DEC, DOH, DCC, DOT, etc., and City officials, including Deputy Mayor Mark Shaw.

- Numerous meetings and communications with elected officials, including City Council members, State Senators, and Congressmen. In recent weeks, we have been working with Senator Clinton's office, and with Congressman Nadler's office. Also, along with other schools in the area, we have been working closely with City Councilman Alan Gerson, especially regarding the current high lead levels in all the area schools.
- We have joined forces with the downtown community through the PA Political, Social, and Legal Action Committee, and have joined the WTC Environmental Coalition. The PA participated in a press conference and rally at City Hall in December, and jointly with the other schools and the Stuyvesant Student Union petitioned the Mayor to move the barge. In addition to the other schools, we are working with Borough of Manhattan Community College, Community Board 1, Independence Plaza Tenants' Association, Lower Manhattan Residents' Relief Coalition, NYC Coalition to End Lead Poisoning, Chinatown community organizations, unions, and others.
- Consultation with several major law firms. At the February 13 PA General Meeting, a motion was voted upon for the PA to retain legal counsel on a pro-bono basis (at no cost to the PA) to explore legal courses of action. We are currently talking to several law firms interested in taking our case. In the near future, parents will be called upon to vote on commencing litigation. Per the PA By-Laws, parents have to be present to vote.

Finally, I would like to bring to your attention that a minority of the Executive Board is opposed to asking the BOE to take action on the cleaning of the ducts and on the upgrade of the filtration systems. Also, this minority is opposed to legal action. In an effort to inform you of their point of view, enclosed is a statement signed by 12 of the 34 Executive Board Members. I believe the following addresses this minority group's major concerns:

- **Regarding Air Quality at Stuyvesant**:
  We disagree with the statement of these Board members that "Air quality reports on the PA website indicate that for the last two months on-going air quality inside the school has been good".
  As shown on the PA website, on several days since mid-December, particulates exceeded EPA regulatory levels for children. There were elevated lead levels in December, January, and February. On January 2, lead levels as high as 599 ug/sq.ft.were found, in excess of the regulatory limits of 40 ug/sq.ft.for floors and 250 ug/sq.ft.for windowsills, and on February 6 (even after the installation of the upgraded filters) elevated lead levels were found in all areas tested by the BOE. (Please note that the BOE tests for lead only once per week).

- **Regarding Cost of Litigation**:
  Any litigation will be on a pro-bono basis, i.e., the law firm will not charge the PA for any legal fees, which is by far the largest cost of any litigation. Regarding expenses of litigation, like photocopying of documents and court filing fees, the PA could decide to fund them up to a certain amount, i.e. say $5,000, and/or they could be funded by third parties. Certain parents have advised me of their willingness to pay for all of the PA's expenses, if needed.
- **>Regarding the BOE Spending Millions of Dollars for a Ventilation System at Stuyvesant, When Other Schools Have More Pressing Needs**:
  The proposed upgrade of the ventilation system to accommodate 90-95% efficiency protective filtration for our children (as compared to the current and inadequate 40% efficient filters) is estimated to cost $1.6 million.
  It is our understanding that the BOE's reported $1 million cost to clean Stuyvesant in September and October, as well as the environmental testing costs, were paid by the federal agency FEMA, not by the BOE.

  We consider the health of our children to be a very pressing need.

- **Regarding Negative Attention for Stuyvesant**:
  We believe negative attention results from the proximity of the barge and the incidence of illness, rather than from any action taken by parents to protect their children.
- **Regarding Absolute Safety**:
  As explained earlier, in the post-9/11 unprecedented and unknown environment, the environmental safety of Lower Manhattan is still very much in debate. We agree that the events of 9/11 created uncertainty. This is precisely the reason that we cannot rely on the BOE's unequivocal, absolute assurances on the safety of our children.

**We are not looking for guarantees of absolute safety. We are looking for prudent, precautionary measures, consistent with actions taken by other buildings in the area, to safeguard the health and safety of our children and staff at Stuyvesant.**

I hope this letter answers the questions raised by many of you. I also hope that we will all work together to address the challenges facing us, both in the short-term and during the major construction of Lower Manhattan. If any parent has comments or questions, please do not hesitate to contact us.

Sincerely, Marilena Christodoulou, PA President
&nbsp;

▲
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Parents' Association
Stuyvesant High School
345 Chambers St., Room 271, New York, NY 10282
(212) 312-4838
email the PA

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# Parent Association (or PTA) Communications—High School of Leadership and Public Service

## WE DON'T FEEL THE BUILDING IS SAFE

The Board of Education has provided a environmental report on the alleged safety of the High School for Leadership and Public Service. We do not feel that this report is adequate.

- The Board of Education report was conducted by a company called ATC. The report only reports 5 categories. Regarding potentially deadly Carbon Dioxide concentrations, the ATC report dated 2/27/2002 states that Six (6) of the measurements were above the ASHRAF Standard 62-1999 recommended maximum concentration of <700 ppm above the background level.

- ATC did not test for extra-fine particulates "shown to exist in other downtown locations" Recent reports show high presence in downtown area. *See www.nyenvirolaw.org UC-Davis Report*

- ATC claims to have tested for something called Respirable Particulates, but since they don't break down this category and list the substances, there is no evidence that ATC tested for such potentially deadly toxins as PCB's, Dioxins, Furans and Heavy Metals

- ATC's testing methods have been fundamentally inadequate. In a recent letter to the parents and children in PS 89, a highly qualified medical doctor, David Carpenter, Director of the Institute for Health and the Environment, a research and teaching Institute directed at protecting health criticized the testing methods that ATC has used. Dr. Carpenter states:

> Most usual particulates are simple products of combustion, and contain only small quantities of toxic chemicals. This may not be true near to the WTC, since there is clear evidence that dioxins, furans, PCBs, asbestos and several metals were released during the collapse and fires. Thus, even if the particulate levels are below the magic number of 40 ng/m$^3$, it is essential to demonstrate that the particulates do not contain toxic substances at high concentration. This is done by collecting either the particulates from an air filter or the dust from surfaces, weighting the sample, and then determining the relative percentage of the weight that is toxic. This has not be done. There have been some measurements of toxins in air and on surfaces, but not on the basis of weight. Furthermore, some of the measurements done have been totally flawed. For example, the sensitivity of the measurement of PCBs in air was so low that the smallest value that could be detected was 4.2 times greater than the occupational standard for adult white males, and even that value would not be protective of children. *See www.nyenvirolaw.org For PS 89 data*

We have enlisted the help of the New York Environmental Law and Justice Project (NYELJP) and the Center for Constitutional Rights (CCR) – two organizations with experience in environmental advocacy and environmental compliance. All data relevant to the safety of the High School for Leadership is being reviewed by the NYELJP and CCR. Please let us know about the health status of your child and your concerns

**Please Contact:**
High School for Leadership and Public Service PTA President Janis Jones at (718) [redacted]

# Letter from SUNY Albany Institute of Environmental Health

Institute for Health and the Environment
Department of Environmental Health & Toxicology
School of Public Health

*A joint venture with the*
*New York State Department of Health*
*In affiliation with Albany Medical College*

1844

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Carpent@uamail.albany.edu

UNIVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK

February 8, 2002

To the Parents of Children in PS 89:

It was my pleasure to address the parents and teachers at PS 89 last Tuesday night where I could explain why, in my opinion, it is not safe to re-occupy the building at this time. This letter is to put in writing these reasons, and also to tell you more about who I am.

In 1980 I came to Albany as the Director of the Wadsworth Laboratories of the New York State Department of Health. The major event which brought me to Albany was related to Love Canal, which was the first time in our history when people became aware of the hazards of chemical wastes in our communities, and event with many commonalities to the WTC attack. I became the Dean of the School of Public Health at the University at Albany in 1985. When I resigned as Dean in 1998, I became the Director of the Institute for Health and the Environment, a research and teaching institute directed at protecting health. I have considerable expertise on issues related to children's environmental health, as evidenced by the fact that I have been the organizer of two meetings on this subject in Asia, sponsored by the US National Institutes of Health and the World Health Organization.

Children are much more vulnerable than adults to the effects of environmental contaminants, but most of the standards that have been set by EPA and other federal and state agencies are based on effects (often occupational) on adult white males. Therefore, in order to protect children it is essential that one add safety factors over what is proposed for adults. Furthermore, it is not appropriate to be concerned only with immediate, acute health effects, but also to protect children from cancer and other chronic diseases which may appear many years after the exposure to toxins. In my judgment no one has demonstrated that PS 89 is safe for reoccupancy at present, and indeed the evidence presented is clear that it is not safe. The reasons for this conclusion are as follows:

Air-borne particulates are dangerous to everyone. They can triggers asthma attacks in vulnerable individuals, and may even cause asthma and other respiratory diseases. While the EPA standard of an 8-hour work day for adults is 65 ng/m3, EPA has set a level of particulates in air of 40 ng/m3 for adults with respiratory or cardiac disease. This value is also applied to children. The level of particulates measured in PS 89 was greater than 40 ng/m3 on 5 of 11 days tested, and on 3 days even the average sample was greater than this value, while on a fourth day the average was 39.9 ng/m3. On days when the outsider particulate levels were high, the insider levels were high. Therefore, the present filtering system is not preventing particulates from getting into the building. There is, at present, no convincing evidence that the technique used for these measurements is invalid. On the basis of these readings, alone, the school should not be re-opened. There is certainly adequate evidence for asthma, coughs and other kinds of breathing disorders in persons exposed at other sites near the WTC, and children should not be in the school building until the particulate levels are definitively documented to be below 40 ng/m3 at all times.

Most usual particulates are simple products of combustion, and contain only small quantities of toxic chemicals. This may not be true near to the WTC, since there is clear evidence that dioxins, furans, PCBs, asbestos and several metals were released during the collapse and fires. Thus, even if the particulate levels are below the magic number of 40 $ng/m^3$, it is essential to demonstrate that the particulates do not contain toxic substances at high concentration. This is done by collecting either the particulates from an air filter or the dust from surfaces, weighting the sample, and then determining the relative percentage of the weight that is toxic. This has not be done. There have been some measurements of toxins in air and on surfaces, but not on the basis of weight. Furthermore, some of the measurements done have been totally flawed. For example, the sensitivity of the measurement of PCBs in air was so low that the smallest value that could be detected was 4.2 times greater than the occupational standard for adult white males, and even that value would not be protective of children.

Other health experts recommend no outdoor play at times when the particulate levels are high. This is a wise recommendation, but the same recommendation applies to the inside environment.

In my judgement parents have the right, and indeed the responsibility, to demand that the indoor environment of PS 89 be proven to be safe from both acute and long-term health hazards before the building is reoccupied. There is presently no such evidence, and too much doubt to justify re-occupancy at the present time. We must not repeat a Love Canal by making decisions in haste that may adversely affect the health of our children.

Sincerely,

David O. Carpenter

David O. Carpenter, M.D.
Professor

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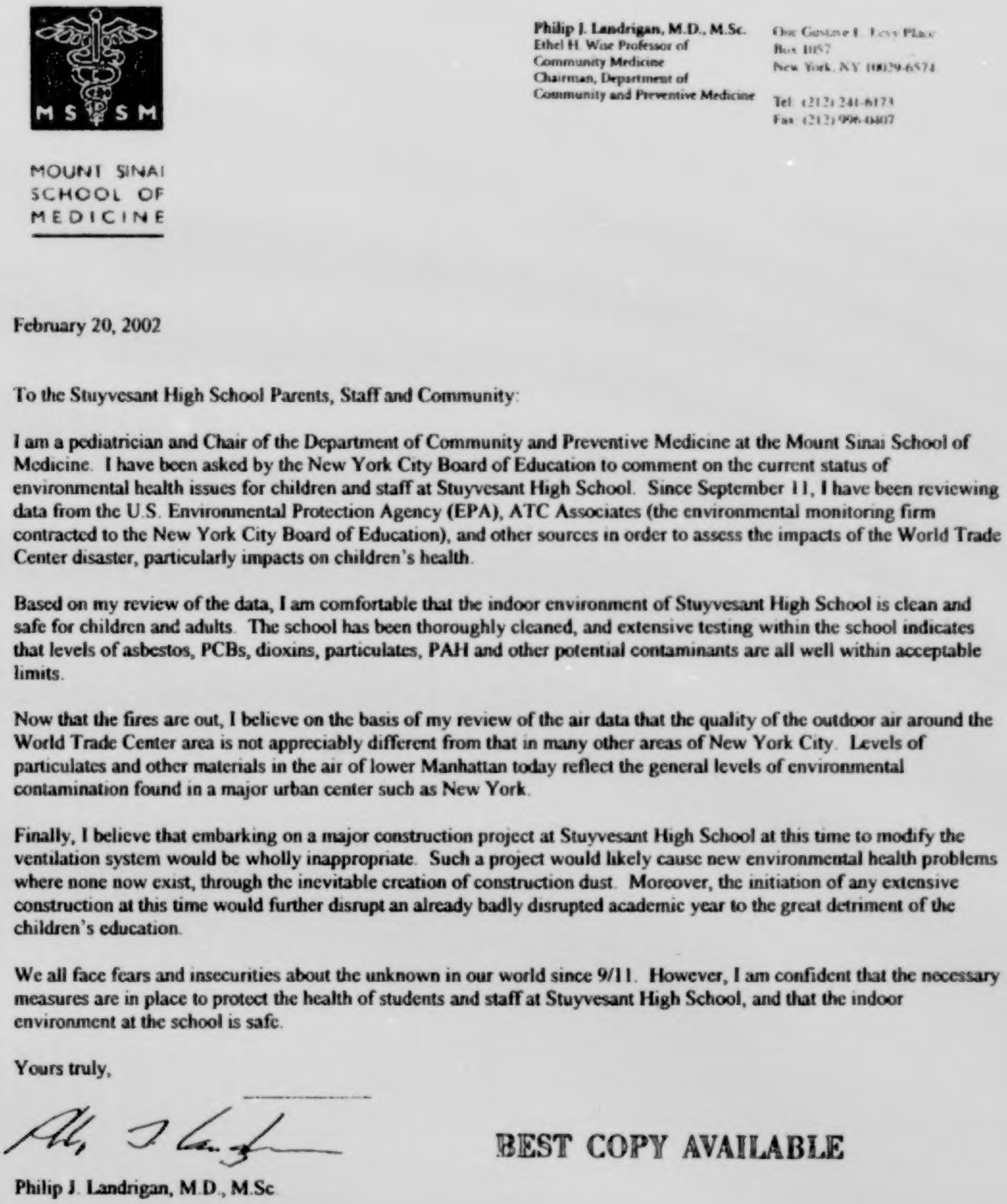
### Summary of Respirable Particulate (PM2.5) Measurements at PS/IS 89<br>Made by ATC for the Board of Education<br>(Through January 28, 2002)

| Date | Number of Readings (Inside/Outside) | Range of PM2.5 Measurements ($ug/m^3$) | Average PM2.5 Measurement ($ug/m^3$) | Number of Measurements above 40 $ug/m^3$ | Number of Measurements above 65 $ug/m^3$ |
|---|---|---|---|---|---|
| January 28, 2002 | 74 inside<br>18 outside | 12-85 (inside)<br>20-106 (outside) | 42 (inside)<br>63 (outside) | 34 (inside)<br>10 (outside) | 1 (inside)<br>10 (outside) |
| January 25, 2002 | 72 inside<br>8 outside | 6-28 (inside)<br>9-30 (outside) | 13 (inside)<br>18 (outside) | 0 (inside)<br>0 (outside) | 0 (inside)<br>0 (outside) |
| January 24, 2002 | 74 inside<br>6 outside | 21-63 (inside)<br>54-83 (outside) | 42 (inside)<br>66 (outside) | 40 (inside)<br>6 (outside) | 0 (inside)<br>2 (outside) |
| January 23, 2002 | 86 inside<br>4 outside | 9-17 (inside)<br>13-20 (outside) | 11.3 (inside)<br>16 (outside) | 0 inside<br>0 outside | 0 inside<br>0 outside |
| January 22, 2002 | 69 inside<br>4 outside | 8-38 (inside)<br>19-61 (outside) | 20.1 (inside)<br>38.8 (outside) | 0 (inside)<br>2 (outside) | 0 (inside)<br>0 (outside) |
| January 21, 2002 | 59 inside<br>2 outside | 31-61 inside<br>70-71 (outside) | 39.9 (inside)<br>70.5 (outside) | 17 (inside)<br>2 (outside) | 0 (inside)<br>2(outside) |
| January 18, 2002 | 48 inside<br>2 outside | 18-30 (inside)<br>35-36 (outside) | 23.6 (inside)<br>35.5 (outside) | 0 (inside)<br>0 (outside) | 0 (inside)<br>0 (outside) |
| January 17, 2002 | 48 inside<br>2 outside | 19-44 inside<br>41-46 (outside) | 28.8 (inside)<br>43.5 (outside) | 2 (inside)<br>2 (outside) | 0 (inside)<br>0 (outside) |
| January 16, 2002 | 23 inside<br>7 outside | 5-13 (inside)<br>10-13 (outside) | 8.6 (inside)<br>11.7 (outside) | 0 (inside)<br>0 (outside) | 0 (inside)<br>0 (outside) |
| January 15, 2002 | 7 inside<br>3 outside | 30-60 (outside)<br>80-82 (outside) | 45.5 (inside)<br>80.7 (outside) | 3 (inside)<br>3 (outside) | 0 (inside)<br>3 (outside) |

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| January 11, 2002 | 60 inside<br>1 outside | 7-18 (inside)<br>36 (outside) | 9.2 (inside)<br>36 (outside) | 0 (inside)<br>0 (outside) | 0 (inside)<br>0 (outside) |

| Summary of Asbestos Analyses at PS/IS 89<br>Performed by ATC for the Board of Education<br>(Through January 28, 2002) | | | | |
|---|---|---|---|---|
| **Sample Date** | **Number of Samples Collected (Inside/Outside)** | **Number of Samples with Asbestos Structures Detected** | **Maximum Asbestos Concentration (structures/mm$^2$)** | **All Samples below AHERA Clearance Level of 70 structures/mm$^2$?** |
| January 28, 2002 | 10 inside<br>6 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 27, 2002 | 10 inside<br>6 outside | 0 inside<br>1 outside | 22 str/mm$^2$ | Yes |
| January 26, 2002 | 10 inside<br>6 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 25, 2002 | 10 inside<br>6 outside | 1 inside<br>0 outside | 22 str/mm$^2$ | Yes |
| January 24, 2002 | 10 inside<br>6 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 23, 2002 | 10 inside<br>6 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 22, 2002 | 8 inside<br>3 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 21, 2002 | 8 inside<br>6 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 19, 2002 | 3 inside<br>3 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 18, 2002 | 6 inside<br>6 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 17, 2002 | 6 inside<br>6 outside | 0 inside<br>0 outside | None Detected | Yes |
| January 16, 2002 | 6 inside<br>6 outside | 1 inside<br>1 outside<br>(1 structure each) | 22 str/mm$^2$ | Yes |
| January 12, 2002 | 4 outside | 0 outside | None Detected | Yes |
| January 10, 2002 | 45 inside | 0 inside | None Detected | Yes |

# Letter from Mt. Sinai Department of Community and Preventive Medicine



MSSM
MOUNT SINAI
SCHOOL OF
MEDICINE

**Philip J. Landrigan, M.D., M.Sc.**
Ethel H. Wise Professor of
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Chairman, Department of
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February 20, 2002

To the Stuyvesant High School Parents, Staff and Community:

I am a pediatrician and Chair of the Department of Community and Preventive Medicine at the Mount Sinai School of Medicine. I have been asked by the New York City Board of Education to comment on the current status of environmental health issues for children and staff at Stuyvesant High School. Since September 11, I have been reviewing data from the U.S. Environmental Protection Agency (EPA), ATC Associates (the environmental monitoring firm contracted to the New York City Board of Education), and other sources in order to assess the impacts of the World Trade Center disaster, particularly impacts on children's health.

Based on my review of the data, I am comfortable that the indoor environment of Stuyvesant High School is clean and safe for children and adults. The school has been thoroughly cleaned, and extensive testing within the school indicates that levels of asbestos, PCBs, dioxins, particulates, PAH and other potential contaminants are all well within acceptable limits.

Now that the fires are out, I believe on the basis of my review of the air data that the quality of the outdoor air around the World Trade Center area is not appreciably different from that in many other areas of New York City. Levels of particulates and other materials in the air of lower Manhattan today reflect the general levels of environmental contamination found in a major urban center such as New York.

Finally, I believe that embarking on a major construction project at Stuyvesant High School at this time to modify the ventilation system would be wholly inappropriate. Such a project would likely cause new environmental health problems where none now exist, through the inevitable creation of construction dust. Moreover, the initiation of any extensive construction at this time would further disrupt an already badly disrupted academic year to the great detriment of the children's education.

We all face fears and insecurities about the unknown in our world since 9/11. However, I am confident that the necessary measures are in place to protect the health of students and staff at Stuyvesant High School, and that the indoor environment at the school is safe.

Yours truly,

Phil J. Landrigan

Philip J. Landrigan, M.D., M.Sc.

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# Parent Survey Results: Healthy Schools Network, Inc.

## Parent Survey, Spring 2002

(sent home in backpacks with elementary and middle school students; also available on the web)

| **Healthy Schools Network Parents Survey** | | **Number of Responses** |
|---|---|---|
| **Total surveys returned** | | 317 |
| **Total Students (one out of country on 9/11)** | | 334 |
| **N = Number of surveys tabulated** | | 316 |
| | | |
| ***What is the school and grade level of your child?*** | | |
| | Pre K | 82 |
| | 1rst- 5th | 227 |
| | 6th- 8th | 25 |
| | | |
| ***Was there a time after the attack when you didn't know where your child was?*** | | |
| | Yes | 87 |
| | No | 229 |
| | | |
| ***If you didn't know where you child was, how long did this last for?*** | | |
| | Less then an hour | 27 |
| | one to three hours | 32 |
| | Three to five hours | 16 |
| | Five to ten hours | 10 |
| | Other | 2 |
| | | |
| ***During this Time what was your child's experience?*** | | |
| | He/She was lost | 2 |
| | He/She was not lost but couldn't get through by phone | 13 |
| | He/She was with friends or a teacher | 125 |
| | Other | 17 |
| | | |
| ***Looking back on September 11th , what is the most important thing your school did right?*** | | |
| | Helped our Children feel safe and Secure | 165 |
| | Kept them physically safe | 80 |
| | Evacuated them safely and quickly | 97 |
| | Other | 21 |
| | | |
| ***Given how terrible and surprising the attacks were, what do you think your school could have done differently?*** | | |
| | Nothing . They did the best they could. | 210 |
| | Told Parents at the start of the school year about emergency evacuation plans | 63 |
| | Made it easier for parent to get information about their children | 16 |
| | Evacuated earlier in the school day | 41 |
| | Evacuated the children to a place easier to get to | 7 |
| | Other | 12 |
| | | |
| ***When your child left school that morning, was he/she exposed to dust or fumes from collapsing building(s)?*** | | |
| | Yes | 125 |
| | No | 189 |
| | | |
| ***Since 9/11, is your child taking any new pr extra medications to control physical health problems?*** | | |
| | Yes | 20 |
| | No | 293 |
| | | |
| ***If your child has experienced new health problems since returning to the school, what kind are they?*** | | |
| | Headaches | 27 |
| | Breathing problems | 14 |
| | Eye irritation | 9 |
| | Skin Rashes | 10 |
| | Other | 40 |

| | |
|---|---|
| ***Since 9/11, is your child taking and new medication or getting special counseling for stress or emotional problems after the disaster?*** | |
| Yes | 63 |
| No | 251 |
| | |
| ***If a University Medical Center set up a special environmental health research study, would you like to be contacted about how your family could participate?*** | |
| Yes | 178 |
| No | 122 |
| | |
| ***How much do you feel that the evacuation, relocation of schools, and new environmental problems in Lower Manhattan have affected your child's classroom learning?*** | |
| Not at all | 41 |
| Just a little | 117 |
| More than a little | 110 |
| seriously | 45 |
| | |
| ***How would you rate the job the city, state and federal officials did last fall telling people about environmental health in lower Manhattan?*** | |
| Excellent | 8 |
| Very good | 24 |
| Good | 53 |
| Fair | 98 |
| Poor | 129 |
| | |
| ***How would you rate that the NYC Board of Education and Chancellor Levy did working on environmental health and safety issues at your school since Sept. 11th?*** | |
| Excellent | 13 |
| Very good | 59 |
| Good | 83 |
| Fair | 97 |
| Poor | 58 |
| | |
| ***How comfortable did you feel about returning to your school?*** | |
| completely comfortable | 119 |
| It wasn't great, but I dealt with it | 97 |
| I worried about going back | 40 |
| I did not agree with going back | 44 |
| other | 21 |
| | |
| ***I am more active in my child's school and in the community because of the attack:*** | |
| Yes | 134 |
| No | 167 |

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# NYC/NYS Regulations on Emergencies and Indoor Environments in Effect Prior to 9/11/01

**NEW YORK CITY BOARD OF EDUCATION**

## **Regulation** of the Chancellor

Category: **STUDENTS** Number: **A-414**

Subject: SAFETY PLANS Page: 1 of 3

Issued: 09/05/00

### ABSTRACT

This Regulation supersedes and replaces Chancellor's Regulation A-414 dated October 1, 1979. Maintaining a safe and secure school environment is the shared responsibility of the entire school community, including school safety, pedagogical, non-pedagogical and custodial personnel, parents and students. As part of a continuing effort to provide the safest possible environment, each school must develop a safety plan on an annual basis.

### I. School Safety Committee

A. Principals are responsible for ensuring that every school establishes a school safety committee and that the committee meets on a monthly basis.

B. The committee shall be comprised of the following individuals: (1) Principal of the host building; (2) Principal/Designee of any other program operating within the building; (3) U.F.T. Chapter Leader; (4) Custodial Engineer/Designee; (5) In-house School Safety Agent Level III/Designee; (6) NYPD Precinct Commanding Officer/Designee; (7) Parent Association President/Designee; (8) Dietician/Designee of food services for the site; (9) Representative of the Student Body; and (10) Any other person or persons deemed essential by the committee.

C. The committee is responsible for developing a comprehensive safety plan which defines the normal operations of the site and what procedures are in place in the event of an emergency. The plan must be consistent with the prescribed safety plan shell which will be distributed on an annual basis.

D. Safety plans must be updated annually by the school safety committee in order to meet changing security needs and conditions.

## II. Submission of Plans

A. Principals must submit completed safety plans for approval to the appropriate superintendent by the end of the third week of September of each year.

B. The superintendent shall review each plan to ensure that it is satisfactory and consistent with the safety plan shell. The superintendent will return unsatisfactory plans to the principal for appropriate revisions.

C. The superintendent shall submit each school's approved plan to the Commanding Officer, School Safety Division by October 15th of each year. Safety plans deemed unsatisfactory by the Commanding Officer, School Safety Division, will be returned to the superintendent for appropriate revisions. The superintendent shall make the necessary changes, recertify the plan and submit it to the Commanding Officer by November 15th of each year.

## III. Violation of Safety Plan

A. A complaint by a teacher, or UFT Chapter Leader, that there has been a violation of the safety plan should be made to the principal as promptly as possible.

B. The principal will attempt to resolve the complaint within 24 hours after receiving the complaint.

C. If the teacher, or UFT Chapter Leader is not satisfied, an appeal may be made to the Executive Director of Student Safety and Prevention Services, who will arrange for a mediation session within 48 hours.

D. If the teacher, or the UFT Chapter Leader is not satisfied with the results of the mediation, an appeal may be made by an expedited arbitration process, to be developed by the parties.

## IV. Inquiries

Inquiries pertaining to this regulation should be addressed to:

***Division of Student Safety and***
***Prevention Services***
**Safety Plans**
110 Livingston Street, Room 828
Brooklyn, NY 11201

Telephone
**(718) 935-4340**

Fax
**(718) 935-4472**

# SUBCHAPTER J

## *Buildings and Transportation*

**PART**
**155** **Educational Facilities**
**156** **Transportation**

## PART 155

## EDUCATIONAL FACILITIES

(Statutory authority: Education Law, §§ 101, 207, 215, 305, 305[14] as amd. by L. 1997, ch. 464, 403-b, 408, 409, 409-d, 409-e, 409-h, 1950[4][t], 2503, 2554, 2801-a, 3602, 3602-a[4], 3641, 4403; Energy Law, § 9-103[8]; Environmental Conservation Law, §§ 8-0113[3], 8-0117[5]; Executive Law, art. 2-B; L. 1987, ch. 53, § 17; L. 1992, chs. 466, 700; L. 1993, ch. 700; L. 1994, ch. 64, §§ 1, 2; L. 1997, ch. 436; L. 1998, ch. 58, §§ 13, 48, ch. 56, part B, § 1; L. 2000, ch. 60, part A, § 5 and ch. 181; L. 2000, ch. 185, § 6)

Sec.
155.1 Educational facilities
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155.16 School asbestos hazard grant program
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**Historical Note**

Part (§§ 155.1-155.8) filed Feb. 3, 1971; amd. filed April 29, 1975 eff. Sept. 1, 1975. Amended Part title.

### § 155.1 Educational facilities.

Each school district shall provide suitable and adequate facilities to accommodate the programs of such district.

(a) Each school district shall develop and keep on file a comprehensive long-range plan pertaining to educational facilities. Such plan shall be reevaluated and made current at least annually, and shall include appraisal of the following: the educational philosophy of the district, with resulting administrative organization and program requirements; present and projected pupil enrollments; space use and State-rated pupil capacity of existing facilities; priority of need of maintenance, repair or modernization of existing facilities, including consideration of the obsolescence and retirement of certain facilities; and the provision of additional facilities.

(1) The numbers, types, space requirements and pupil capacities of facilities shall be in relation to the present and projected needs of the school district programs, including mandated educational requirements.

(2) Pupil enrollment projections shall be based on a school district census projection of each grade level. Elementary grade enrollments, kindergarten through sixth grade, shall be projected a maximum of five years. Secondary grade enrollments, seventh through twelfth grade, shall be projected a maximum of 10 years.

(3) Educational specifications for the erection, enlargement, remodeling or initial use of educational facilities shall be submitted to the commissioner. Such specifications shall be based on the comprehensive long-range plan of the district and shall include the educational philosophy of the project, description of educational program, including activities to be conducted and related space and facilities requirements; and description of innovative or experimental concepts or features which may be included.

(4) Each school district shall prepare a five-year capital facilities plan no later than July 1, 2001, and shall update such plan annually. Such plan shall be prepared in a manner and in a format prescribed by the commissioner and copies of such plan shall be submitted to the commissioner upon request. Such plan shall include, but shall not be limited to:

(i) a breakdown for each of the five years of the plan of the estimated expenses for the following:

(*a*) current or proposed new construction ranked in priority order;

(*b*) current or proposed additions to school facilities ranked in priority order;

(*c*) current or proposed alterations or reconstruction of school facilities ranked in priority order;

(*d*) major repairs ranked in priority order;

(*e*) major system replacement and repairs, and maintenance ranked in priority order; and

(*f*) energy consumption;

(ii) a districtwide building inventory which shall include, but shall not be limited to:

(*a*) the number and type of facilities owned, operated or leased by the district;

(*b*) the age, enrollment, rated capacity, use, size and the safety rating of such buildings as determined pursuant to the provisions of section 155.4(c) of this Part;

(*c*) the energy sources for such buildings;

(*d*) probable useful life of each building and its major subsystems;

(*e*) need for major system replacement and repairs, and maintenance;

(*f*) summary of the triennial asbestos reports required pursuant to the Asbestos Hazard Emergency Response Act (AHERA) regulations, 40 CFR part 763 (Code of Federal Regulations, 1998 Edition, Superintendent of Public Documents, U.S. Government Printing Office, Washington, DC 20402; 1998; available at Office of Facilities Planning, Education Building Annex, Room 1060, State Education Department, Albany, NY 12234); and

(*g*) any other information which may be deemed necessary by the commissioner to evaluate safety and health conditions in school facilities.

(b) Facilities shall be designed and constructed to provide for the health and safety of occupants, with consideration of educational and planning efficiency, conservation of natural resources, practicality, and initial and long-range economy, and shall support an environment within the facility which is conducive to learning.

(1) Design of a facility shall provide space layouts and number, size and arrangement of exit facilities that will insure prompt escape of occupants from a hazard to life safety.

(2) Visual environment of a facility.

(i) Adequate levels of illumination, consistent with efficient energy consumption, shall be provided in each area of a facility for the tasks being performed.

(ii) Natural and artificial lighting shall produce a controlled environment of balanced brightness, free from objectionable glare.

(iii) Teaching areas shall have fenestration which permits a view of the exterior, unless otherwise approved by the commissioner.

(iv) Teaching spaces shall be properly proportioned as to size and shape of room, including ceiling height.

(v) Color, finishes, lighting, furnishings and related items shall reasonably be combined to provide an aesthetic learning environment.

(vi) A report that new installations and replacements of mercury vapor or metal halide lamps are of a fail-safe type which self-extinguish if the shielding of the lamp is broken, cracked or removed shall be included in the annual fire inspection report filed pursuant to Education Law, section 807-a. If such fail-safe type lamps are unavailable, the report shall state that an ultraviolet radiation-absorbing shield has been provided for each new or replacement mercury vapor or metal halide lamp, in accordance with the provisions of section 409-b of the Education Law.

(3) Thermal environment of a facility. (i) Controlled heating and ventilation shall be provided and maintained in all areas to produce conditions suitable for the varying activities that take place in the various areas by systems providing efficient consumption of energy.

(ii) Each teaching space shall be provided with a controlled supply of fresh air and shall have sufficient air changes to produce healthful conditions and avoid odors or build-up or concentrations of toxic substances or dust particles.

(iii) When teaching spaces cannot be provided with an adequate thermal environment by ventilation as determined by the commissioner, provision for cooling may be required by the commissioner.

(4) Sanitation. (i) Water shall be safe and potable, from an approved source, and shall be dispensed within a facility from sanitary drinking fountains.

(ii) Toilet rooms shall have an adequate number of proper fixtures.

(iii) Sanitary sewers shall be connected to a municipal sewage system or an approved onsite disposal system.

(c) Sites for the erection or enlargement of facilities shall be approved by the commissioner, provided they have been selected with reasonable consideration of the following factors:

(1) size and location of a site shall be consistent with the long-term building plans of the district;

(2) sites shall be educationally adaptable with consideration for situation of building and development of the grounds for outdoor educational program and related activities, without excessive initial or development costs, and shall provide the following minimum usable acres, unless otherwise approved by the commissioner:

(i) elementary schools (kindergarten through sixth grade): three acres base plus one acre for each 100 pupils or fraction thereof;

(ii) secondary schools (7th through 12th grade): 10 acres base plus one acre for each 100 pupils or fraction thereof;

(3) sites shall be developed to conserve natural resources and avoid environmental problems within the limits of the educational program. Care shall be taken to insure that the site and facilities thereon are consistent with and contribute to the school and community environment and provide for the health and safety of occupants.

(d) *Inspection of facilities.* (1) Structural safety inspections. Structural safety inspections occurring on or before October 7, 1999 shall be conducted pursuant to the provisions of this subdivision. To insure that all facilities occupied by students are properly maintained and preserved and provide a suitable educational setting, the board of education of each school district shall cause such facilities owned by the district to be inspected in accordance with section 409-d of the Education Law and this paragraph. A visual inspection of structural elements of all school buildings occupied by students shall be conducted annually.

(i) (*a*) In districts other than city school districts in cities having 125,000 inhabitants or more, annual structural inspections:

(*1*) shall include, but not be limited to, inspection of exterior wall components, doors, windows, retaining walls, roofs and interior building components for evidence of movement, deterioration and structural failure;

(*2*) shall be conducted by a team which is composed of at least the director of facilities, the building custodian and a code enforcement official; and

(*3*) shall be made prior to the 30th day of June of each school year.

(*b*) In city school districts in cities having 125,000 inhabitants or more, the visual structural inspection shall be conducted in accordance with standards established by the board of education of such city school district and submitted to the commissioner for approval.

(*c*) Annual visual safety inspections shall be made prior to the 30th day of June of each school year. Reports of such inspections shall be retained in district files for six years after the building no longer exists, but not less than 21 years, whichever is longer. Such reports shall be available to the public on request.

(ii) When a visual structural inspection discloses evidence of a possible defective structural condition, a licensed architect or licensed professional engineer shall be retained immediately to inspect the condition and ascertain if structural modifications are necessary. The architect or engineer shall present a written report of all findings to the board of education, which shall act to correct any defective structural conditions.

(iii) Building aid computed pursuant to paragraph (d) of subdivision 6 of section 3602 of the Education Law is available for inspections by a licensed architect or engineer which result from the annual visual structural inspection of a building if no claim for building aid for such an inspection in such building has been filed in the previous five years. The apportionment of such building aid for each school building so inspected by a school district in the base year shall not exceed the lesser of: the product of the building aid ratio and the actual cost, or the structural inspection aid ceiling computed by the commissioner. For aid payable in the 1993-94 school year and thereafter, the structural inspection aid ceiling shall be the sum of $10,000 plus an additional amount computed as follows:

(*a*) The monthly indices for the costs of labor and material determined by the New York State Department of Labor, adjusted for the base month of July 1993, shall be used to compute such additional amount. The commissioner shall compute an index number which shall equal the positive remainder resulting when one is subtracted from the quotient of the Department of Labor index for July of the current year divided by the Department of Labor index for July 1993.

(*b*) The additional amount shall be the positive result of the product of $10,000 and the index number computed pursuant to clause (*a*) of this subparagraph for the month of July in the current year.

(iv) Reports of structural inspections by the licensed architect or engineer shall be submitted to the commissioner together with any claim for building aid. For districts other than city school districts in cities having 125,000 inhabitants or more, copies of the reports shall also be submitted to the appropriate district superintendent of schools. A claim for building aid shall be made, in a form prescribed by the commissioner, within six months of the date of the architect's or engineer's report, for aid payable in the following school year.

**Historical Note**

Sec. amd. filed Feb. 3, 1971; repealed, new filed April 29, 1975; amds. filed: Nov. 20, 1978; Sept. 30, 1981; July 31, 1984; March 1, 1988; Oct. 20, 1992 as emergency measure; Jan. 19, 1993 as emergency measure; Feb. 22, 1993; Sept. 21, 1999 eff. Oct. 7, 1999. Amended (a)(4), (d)(1).

### § 155.2 Construction and remodeling of school district facilities.

(a) All plans, specifications and work regarding the erection, enlargement, repair, replacement, maintenance or remodeling of occupied facilities of school districts and of boards of cooperative educational services shall comply with the Uniform Safety Standards for School Construction and Maintenance Projects as set forth in section 155.5 of this Part. Such uniform safety standards shall include but not be limited to: pre-construction testing and planning, exiting and ventilation, pre-construction notification, asbestos and lead protocols, control of dust, gases and fumes, protection from falling debris, and general safety and security.

(b) Plans and specifications for the erection, enlargement, repair or remodeling of facilities of school districts, other than in city school districts in cities having one million inhabitants or more, and of boards of cooperative educational services, shall be submitted to the commissioner when the contemplated construction costs of such work are $10,000[1] or more, and for all projects affecting the health and safety of pupils.

(1) Documentation in such quantity and format as prescribed by the commissioner, including plans and specifications, addenda and change orders, shall be submitted to the commissioner for approval in accordance with procedures set forth by the commissioner. When approved, such documentation shall be retained by the department. A commissioner's approval letter referencing such documentation shall be sent to school authorities. School authorities shall maintain approved documentation, including copies of approved plans and specifications, addenda, change orders, and the associated commissioner's approval letter, for permanent filing.

(i) Plans and specifications shall conform to the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250) and to this Part, and shall show in detail requirements of design and construction, space layout, circulation and exiting facilities, smoke and fire control, accident protection, visual and thermal environment and related electrical and mechanical work, and sanitation and related plumbing work which insure the health, safety and comfort of occupants of the facility.

(ii) Materials, equipment and types of construction which may endanger the health, safety and comfort of occupants shall not be used.

(iii) Construction materials, details and workmanship shall conform to generally accepted standards as determined by the commissioner.

(iv) Specifications for construction shall allow for equivalencies and shall not require the base bid to be based only on the materials or products specified.

(v) Specifications for construction shall require that contractors or suppliers furnishing mechanical equipment shall instruct the governing body of the school district or board of cooperative educational services or its representative in the proper operation and service of all such equipment at the time of completion and before acceptance of the building by such governing body.

(vi) Should accounting, tabulation or computer equipment be requested as original equipment, the plans and specifications shall conspicuously identify the areas or spaces for the installation of such equipment. Such plans and specifications shall contain a description of the equipment, its estimated costs, the need for and purpose of such equipment, a description of the space required to house the equipment, including the proposed pupil capacity of such space, and a description of the integral relationship between the construction work and the equipment. Such equipment shall not be approved for purposes of building aid computed pursuant to section 3602(6) of the Education Law, when located outside the constructed or reconstructed space or when not shown to have a direct integral relationship to the construction work.

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[1] When construction costs are $10,000 or more, building construction aid, pursuant to Education Law, section 3602, is available for eligible capital outlays.

(2) Plans and specifications for portions of facilities which require approval by other departments of the State shall be approved by the appropriate agencies having jurisdiction as a condition of commissioner's approval of plans and specifications of a facility.

(3) Decisions regarding compliance of plans and specifications with this section shall be determined by the commissioner.

(4) Plans and specifications submitted to the commissioner shall bear the signature and seal of an architect or engineer licensed to practice in the State of New York. The architect or engineer who sealed the plans and specifications shall also certify that the plans and specifications conform to the standards set forth in the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250) and the State Energy Conservation Construction Code (9 NYCRR Parts 7810 through 7816).

(5) Upon approval of plans and specifications, the commissioner will issue a building permit subject to the following qualifications:

(i) During construction, the project shall be properly supervised by a licensed architect or engineer.

(ii) The building permit may be revoked by the commissioner in the event of violations of the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250), this Part or other safety standards imposed by law or regulation.

(6) Following completion of the project or a substantial portion thereof, the architect or engineer shall certify to the commissioner that the project was completed in conformance to the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250), this Part, and plans and specifications for the project which were previously approved by the commissioner.

(c) For remodeling or construction projects costing $5,000 or more, the governing body of a school district or a board of cooperative educational services shall assure compliance with the requirements of the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250) and of this Part, and shall retain the services of an architect or engineer licensed to practice in New York State.

(d) For remodeling or construction projects costing less than $5,000, the governing body of a school district or a board of cooperative educational services shall assure compliance with the requirements of the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250) and of this Part.

(e) (1) For each project for which a certificate of substantial completion is issued on or after April 1, 1995, all school districts, including a city school district having one million inhabitants or more and all boards of cooperative educational services, shall submit to the Commissioner a final cost report for the project by June 30 of the school year in which the certificate of substantial completion of the project is issued by the architect or engineer, or six months after issuance of such certificate, whichever is later. For projects for which a certificate of substantial completion is issued prior to April 1, 1995, the deadline for submission of a final cost report for the project shall be October 1, 1995.

(2) The commissioner may grant one or more extensions of the applicable deadline for submission of a final cost report pursuant to this section, upon a finding that the district is unable to complete the final cost report by the prescribed date because of circumstances beyond the control of the district. Each extension may be granted for a period of up to one year.

**Historical Note**

Sec. repealed, new filed April 29, 1975; amds. filed: May 1, 1984; July 31, 1984; Feb. 7, 1995; Sept. 21, 1999; Nov. 14, 2000 eff. Nov. 30, 2000. Amended (b)(1).

## § 155.3 Comprehensive Public School Safety Program.

To ensure that all school facilities are properly maintained and preserved and provide suitable educational settings, the board of education of each school district and each board of cooperative educational services shall cause all occupied school facilities which are owned, operated or leased by the district or board to comply with the provisions of the Comprehensive Public School Safety Program as set forth in this section and the Uniform Code of Public School Building Inspections, Safety Rating and Monitoring, as prescribed in section 155.4 of this Part. For purposes of this section and sections 155.4 through 155.7 of this Part the term *board of cooperative educational services* shall be deemed to include a county vocational education and extension board. The Comprehensive Public School Safety Program shall consist of the following components:

(a) *Building condition surveys.* The board of education of each school district and each board of cooperative educational services shall develop building condition surveys for each occupied school building in accordance with section 3641(4) of the Education Law and the provisions of section 155.4(b)(1) of this Part.

(b) *Annual visual inspections.* The board of education of each school district and each board of cooperative educational services shall conduct annual visual inspections of each occupied school building in accordance with the provisions of section 155.4(b)(2) of this Part, provided that the board of education of each school district and each board of cooperative educational services shall implement a safety rating system for all occupied school buildings pursuant to section 155.4(c) of this Part.

(c) *Five year capital facilities plan.* The board of education of each school district and each board of cooperative educational services shall develop a new five year capital facilities plan pursuant to section 155.1(a)(4) of this Part or amend its existing plan to comply with such section, provided that in the case of a city school district in a city having a population of one million inhabitants or more, such plan shall also comply with section 2590-p of the Education Law. Five year capital facilities plans shall be consistent with all district planning requirements including, but not limited to, the regional five year special education space requirements plan required by section 200.2(g) of this Title. Every school district and board of cooperative educational services shall use the safety rating of each occupied building in developing or amending its five year facilities plan. Such plan shall identify critical maintenance needs.

(d) *Monitoring system.* The board of education of each school district and each board of cooperative educational services shall establish procedures to monitor the safety and condition of all occupied school buildings in accordance with the provisions of section 155.4(d) of this Part.

(e) *Waivers.* The board of education of a school district or a board of cooperative educational services may apply to the commissioner for a waiver of the requirements of this section, or of any of the provisions of section 155.4 or 155.5 of this Part, upon a finding that such district had in existence on the effective date of this Part, school building safety inspection procedures which are in substantial compliance with such requirements. Such waiver requests shall include:

(1) identification of the regulatory requirement from which a waiver is sought;

(2) a copy of the building inspection procedures alleged to be in substantial compliance to such regulatory requirement, together with proof that such procedures were in effect on the effective date of this Part; and

(3) the names and qualifications of the inspectors carrying out such procedures; copies of previous reports under such procedures; and records of actions taken to correct deficiencies identified using such procedures.

**Historical Note**

Sec. amd. filed July 25, 1963; repealed, new filed April 29, 1975; amd. filed April 25, 1978; renum. 155.7, new filed Sept. 21, 1999 eff. Oct. 7, 1999.

### § 155.4 Uniform Code of Public School Building Inspections, Safety Rating and Monitoring.

(a) *Short title and application.* This section, promulgated pursuant to sections 409-d, 409-e, 3602(6) and (6-e) and 3641(4) of the Education Law, shall be known as the Uniform Code of Public School Building Inspections, Safety Rating and Monitoring (hereinafter referred to as the code), and shall consist of three components: procedures for periodic inspections, a safety rating system and a monitoring system. The provisions of this section shall apply to all occupied public school buildings, provided that nothing herein shall prevent a school district or board of cooperative educational services from adopting stricter local codes. Such local code must meet or surpass all requirements of the code. Nothing herein shall affect a separate requirement to inspect and maintain school buildings pursuant to any other State or local law or regulation.

(b) *Procedures for periodic inspections.* To insure that all occupied school facilities are properly maintained and preserved and provide a suitable educational setting, the board of education of each school district shall cause such facilities owned, operated or leased by the district to be assessed in accordance with sections 409-d and 409-e of the Education Law and this section, and, where applicable, section 807-a of the Education Law and section 155.8 of this Part. Buildings shall be assessed by a building condition survey conducted once every five years, an annual fire safety inspection conducted pursuant to section 807-a of the Education Law and section 155.8 of this Part or pursuant to local law or codes, and an annual visual inspection conducted in years in which no building condition survey is conducted for the building.

(1) Building condition surveys. A building condition survey shall be conducted for all occupied school buildings on or before November 15, 2000 and at least every five years thereafter, provided that a building condition survey for new buildings which receive a certificate of substantial completion dated August 31, 1995 through September 30, 1999 shall not be required until November 15, 2005 and at least every five years thereafter; and provided further that new buildings which receive a certificate of substantial completion dated October 1, 1999 or thereafter shall be subject to a building condition survey every five years, starting with the second building condition survey following issuance of such certificate.

(i) The physical inspections required to complete the survey shall be conducted by a team that includes at least one licensed architect or engineer. The Commissioner of Education shall prescribe the format required to complete the survey.

(ii) The survey shall include, but not be limited to list of all program spaces and an inspection of the following building system components for evidence of movement, deterioration, structural failure, probable useful life, need for repair and maintenance and need for replacement:

(*a*) the building site, including utilities, paving, playgrounds, and play fields;

(*b*) roofing;

(*c*) exterior elements of the building, including walls, doors, windows, fire escapes;

(*d*) building structural elements;

(*e*) building interiors, including finishes, doors, and hardware;

(*f*) electrical systems, including service and distribution, lighting, communications, technology infrastructure and cabling;

(*g*) plumbing, including water distribution system, drainage system, and fixtures;

(*h*) heating and cooling systems, including boilers, furnaces, terminal units, and control systems;

(*i*) ventilation systems;

(*j*) air conditioning systems, including refrigeration, terminal units, and control systems;

(*k*) special construction, including stairs, elevators, escalators, and swimming pools;

(*l*) fire protection and security systems, including alarm, detection and fire protection; and

(*m*) environmental features, including appearance, cleanliness, acoustics, lighting quality, thermal comfort, humidity, ventilation and space adequacy.

(iii) Reports of building condition surveys, signed and sealed by the licensed architect or engineer, shall be submitted to the commissioner by January 15, 2001 and January 15th of every fifth year thereafter. Building aid computed pursuant to section 3602(6-e)(d) of the Education Law is available for building condition surveys conducted by a licensed architect or engineer if no claim for such a building condition survey in such a building has been filed in the previous five years. The apportionment of such building aid for each school building so inspected by a school district in the base year shall not exceed the lesser of the product of the building aid ratio and the actual cost, or the building condition survey aid ceiling computed by the commissioner. For aid payable in the 2000-2001 school year and thereafter, the building condition survey aid ceiling shall be the product of 20 cents plus an additional amount times the gross area of the building. Such additional amount shall be the result obtained when the cost of labor and material index determined by the New York State Department of Labor for the month of July of the current year is divided by the cost index for July 1999 and the result is rounded to two decimal places. A claim for building aid shall be made in a form prescribed by the commissioner, within six months of the date of the architect or engineer report, for aid payable in the following school year. Such reports shall be made available to the public on request.

(2) Annual visual inspections.

(i) A visual inspection of every occupied public school building shall be conducted annually provided, however, that a building condition survey conducted pursuant to paragraph (1) of this subdivision shall fulfill such requirement for the year in which such survey is conducted, and provided further that the commissioner may require more frequent inspections as deemed necessary to maintain the safety of school buildings and the welfare of their occupants.

(ii) The annual visual inspection shall consist of a visual re-inspection of the components of the building condition survey for changes that may have occurred and a review and update of the safety rating as needed.

(iii) The annual visual inspection shall be conducted by a team composed of a person certified by the Department of State as a code enforcement official, or in the case of the City of New York, a person certified by the New York City Building Department as a local code enforcement official, the district director of facilities or his or her designee, and a member of the health and safety committee required pursuant to subdivision (d) of this section.

(iv) If an annual visual inspection results in a determination that the building may have a deficiency that would result in a determination pursuant to subdivision (c) of this section that the safety rating of the building is unsatisfactory or unsafe/unhealthful, the board of education or board of cooperative educational services shall retain a licensed architect or engineer to perform a detailed inspection and develop a corrective action plan. In addition, the commissioner may require a board of education or board of cooperative educational services to conduct a detailed inspection by a licensed architect or engineer where the commissioner determines that:

(*a*) the school district or board of cooperative educational services has provided insufficient spending for maintenance, repair or capital renewal of the building; or

(*b*) the school provides a poor learning environment pursuant to section 100.2(p) of this Title.

(v) The annual visual inspection shall be completed by November 15 of each year not scheduled for a building condition survey.

(vi) The results of the annual visual inspection of all occupied buildings shall be reported to the commissioner on forms prescribed by the commissioner, shall be signed by the person or persons who conducted the inspection and shall be filed with the commissioner by January 15th. Such reports shall indicate if more frequent inspections and repairs are necessary to protect the health and safety of students and staff occupying such school buildings. Annual visual inspection reports shall be made available to the public.

(vii) Any person, or any public or other corporation for which any such person acts, shall not be liable for any error, omission or lack of thoroughness in the making of the inspection and report required or permitted by this section.

(c) *Safety rating system.* Each school district and board of cooperative educational services shall provide for the safety rating of all occupied school buildings keyed to the structural integrity and overall safety of the building on an annual basis.

(1) The safety rating shall be established by each district or board of cooperative educational services after consultation with the health and safety committee established pursuant to paragraph (d)(1) of this section and shall identify and assess the condition of every major system component of each occupied school building based upon overall assessment of the system or element, probable useful life, structural integrity, overall safety, need for repair and maintenance, need for replacement, the estimated cost of necessary repairs and/or replacement, and assessment of the effectiveness of the building comprehensive maintenance plan required by paragraph (d)(1) of this section.

(2) The major system components of each occupied school building shall be rated in one of the following categories:

(i) Excellent: identifies exemplar systems. No remediation required, requires only routine maintenance as identified in the building comprehensive maintenance plan.

(ii) Satisfactory: system is functioning reliably but routine maintenance and repair required.

(iii) Unsatisfactory: system is functioning unreliably or has exceeded its useful life. A corrective action plan is in place and repairs or replacement have been scheduled.

(iv) Unsafe/Unhealthful: system is non-functioning, unreliable or not functioning as designed. System endangers occupant health and/or safety, and/or has deficiencies that have resulted in serious accident or injury.

(v) Indeterminate: requires additional probing or testing and a summary report will be issued, or drawings or specifications are required.

(3) Building system deficiencies shall be categorized as health and safety, structural, comfort, or aesthetic.

(4) The overall rating of the building shall be determined by a weighted system developed by the commissioner in consideration of paragraphs (2) and (3) of this subdivision and in accordance with the following categories:

(i) Excellent: systems rated in overall excellent condition. Preventive maintenance plan in place.

(ii) Good: systems rated in overall good or better condition.

(iii) Satisfactory: any system categorized as comfort or aesthetic rated as unsatisfactory. All systems categorized as health and safety or structural rated good or better.

(iv) Unsafe/unhealthful: any system categorized as health and safety or structural rated unsafe and or unhealthful. This rating shall result in the revocation of the building's certificate of occupancy.

(d) *Monitoring system.* Boards of education and boards of cooperative educational services shall establish a process to monitor the condition of occupied public school buildings in order to assure that they are safe and maintained in a state of good repair. Such process shall include the following elements:

(1) Establishment of a health and safety committee comprised of representation from district officials, staff, bargaining units and parents.

(2) Establishment of a comprehensive maintenance plan for all major building systems to ensure the building is maintained in a state of good repair. Such plan shall include provisions for a least toxic approach to integrated pest management and establishing maintenance procedures and guidelines which will contribute to acceptable indoor air quality. The comprehensive maintenance plan shall be available for public inspection.

(3) The annual review and approval by the board of education or board of cooperative educational services of the annual building inspection reports and the five year building condition surveys.

(4) In the case of city school districts in cities having a population of 125,000 inhabitants or more, the annual review and approval by the board of education of district efforts for the

care, custody, control and safekeeping of all school property as required by section 2554(4) of the Education Law.

(5) Procedures for assuring that an annual fire safety inspection of each building is conducted in accordance with section 807-a of the Education Law or applicable local laws or codes.

(6) Procedures for assuring that a current and valid certificate of occupancy is maintained for each building and posted in a conspicuous place. The New York City Board of Education shall post current and valid certificates of occupancy for buildings in accordance with the New York City building code and other applicable city regulations.

(7) Procedures for investigation and disposition of complaints related to health and safety. Such procedures shall involve the health and safety committee and at a minimum shall conform to the following requirements:

(i) Provide for a written response to all written complaints. Such written response shall describe:

(*a*) the investigations, inspections or tests made to verify the substance of the complaint, or a statement explaining why further investigations, inspections or tests are not necessary;

(*b*) the results of any investigations, inspections or tests which address the complaint;

(*c*) the actions, if any, taken to solve the problem; and

(*d*) the action, if any, taken if the complaint involved a violation of law or of a contract provision.

(ii) A copy of the response shall be forwarded to the health and safety committee.

(iii) Copies of all such correspondence shall be kept in a permanent project file.

(iv) Such records shall be made available to the public upon request.

(8) In the case of the New York City School District, the board of education shall report quarterly to the commissioner on the status of correcting violations issued by the New York City Department of Buildings. Such report shall indicate the progress made towards completing the projects identified in the educational facilities master plan.

(9) Every board of education and board of cooperative educational services shall take actions to immediately remedy serious conditions affecting health and safety in school buildings, and shall report such actions to the commissioner.

(10) All school construction and maintenance activities shall comply with the Uniform Safety Standards for School Construction and Maintenance Projects as set forth in section 155.5 of this Part.

**Historical Note**

Sec. amd. filed Jan. 18, 1966; repealed, new filed April 29, 1975; amd. filed April 25, 1978; repealed, new filed July 31, 1984; renum. 155.8, new filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.5 Uniform Safety Standards for School Construction and Maintenance Projects

(a) *Monitoring of construction and maintenance activities.* The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy and shall be monitored during construction or maintenance activities for safety violations by school district personnel. It is the responsibility of the board of education or board of cooperative educational services to assure that these standards are continuously maintained when the building or any portion thereof is occupied.

(b) *Investigation and disposition of complaints relating to health and safety received as a result of construction and maintenance activities.* Boards of education and boards of cooperative educational services shall follow procedures established under section 155.4(d)(7) of this Part.

(c) *Pre-construction testing and planning for construction projects.* (1) Boards of education and boards of cooperative educational services shall assure that proper planning is made for safety of building occupants during construction. For all construction projects for which bids are issued on or after September 30, 1999, such boards shall assure that safety is addressed in the bid specifications and contract documents before contract documents are advertised for bid. All school areas to be disturbed during renovation or demolition shall be tested for lead and asbestos. Appropriate procedures to protect the health of building occupants shall be included in the final construction documents for bidding.

(2) Boards of education and boards of cooperative educational services shall establish procedures for involvement of the health and safety committee to monitor safety during school construction projects. The health and safety committees in school districts other than in cities with one million inhabitants or more shall be expanded during construction projects to include the project architect, construction manager, and the contractors. Such committee shall meet periodically to review issues and address complaints related to health and safety resulting from the construction project. In the case of a city school district in a city of one million inhabitants or more, the board of education shall submit procedures for protecting health and safety during construction to the commissioner for approval. Such procedures shall outline methods for compliance with this section.

(3) The district emergency management plan shall be updated to reflect any changes necessary to accommodate the construction process, including an updated emergency exit plan indicating temporary exits required due to construction. Provisions shall be made for the emergency evacuation and relocation or release of students and staff in the event of a construction incident.

(4) Fire drills shall be held to familiarize students and staff with temporary exits and revised emergency procedures whenever such temporary exits and revised emergency procedures are required.

(d) *Pre-construction notification of construction projects.* The board of education or board of cooperative educational services shall establish procedures for notification of parents, staff and the community in advance of a construction project of $10,000 or more to be conducted in a school building while the building is occupied. Such procedures shall provide notice at least two months prior to the date on which construction is scheduled to begin, provided that in the case of emergency construction projects, such notice shall be provided as far in advance of the start of construction as is practicable. Such notice shall include information on the district's obligations under this section to provide a safe school environment during construction projects. Such notice requirement may be met by publication in district newsletters, direct mailings, or holding a public hearing on the project to inform parents, students, school personnel and community members.

(e) *General safety and security standards for construction projects.* (1) All construction materials shall be stored in a safe and secure manner.

(2) Fences around construction supplies or debris shall be maintained.

(3) Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.

(4) During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.

(5) Workers shall be required to wear photo identification badges at all times for identification and security purposes while working at occupied sites.

(f) *Separation of construction areas from occupied spaces.* Construction areas which are under the control of a contractor and therefore not occupied by district staff or students shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. Heavy duty plastic sheeting may be used only for a vapor, fine dust or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas.

(1) A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs or elevators designated for students or school staff.

(2) Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.

(3) All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session.

(g) *Maintaining exiting and ventilation during school construction projects.* The following information shall be included in all plans and specifications for school building projects:

(1) A plan detailing how exiting required by the applicable building code will be maintained during construction. The plan shall indicate temporary construction required to isolate construction equipment, materials, people, dust, fumes, odors, and noise during the construction period. Temporary construction details shall meet code-required fire ratings for separation and corridor enclosure. At a minimum, required exits, temporary stairs, ramps, exit signs, and door hardware shall be provided at all times.

A plan detailing how adequate ventilation will be maintained during construction. The plan shall indicate ductwork which must be rerouted, disconnected, or capped in order to prevent contaminants from the construction area from entering the occupied areas of the building. The plan shall also indicate how required ventilation to occupied spaces affected by construction will be maintained during the project.

(h) *Fire and hazard prevention.* Areas of buildings under construction that are to remain occupied shall maintain a certificate of occupancy. In addition, the following shall be strictly enforced:

(1) No smoking is allowed on public school property, including construction areas.

(2) During construction daily inspections of district occupied areas shall be conducted by school district personnel to assure that construction materials, equipment or debris not block fire exits or emergency egress windows.

(3) Proper operation of fire extinguishers, fire alarm, and smoke/fire detection systems shall be maintained throughout the project.

(i) *Noise abatement during construction and maintenance activities.* Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected building spaces are not occupied or acoustical abatement measures shall be taken. Noise level measurements (dba) shall be taken with a type 2 sound level meter in the occupied space in a location closest to the source of the noise. Complaints regarding excessive noise shall be addressed through the health and safety committee. The district should anticipate those times when construction noise is unacceptable and incorporate "no work" periods into the bid specifications.

(j) *Control of chemical fumes, gases, and other contaminants during construction and maintenance projects.* The bid specifications and construction contracts for each construction project shall indicate how and where welding, gasoline engine, roofing, paving, painting or other fumes will be exhausted. Care must be taken to assure fresh air intakes do not draw in such fumes.

(1) The bid specifications shall require schedules of work on construction and maintenance projects which include time for off-gassing of volatile organic compounds introduced during construction before occupancy is allowed. Specific attention is warranted for activities including glues, paint, furniture, carpeting, wall coverings, and drapery. Manufacturers shall be contacted to obtain information regarding appropriate temperatures and times needed to cure or ventilate the product during use and before safe occupancy of a space can be assured. Building materials or furnishings which off-gas chemical fumes, gases, or other contaminants shall be

aired out in a well ventilated heated warehouse before it is brought to the project for installation or the manufacturer's recommended off-gassing periods must be scheduled between installation and use of the space. If the work will generate toxic gases that cannot be contained in an isolated area, the work must be done when school classes and programs are not in session. The building must be properly ventilated and the material must be given proper time to cure or off-gas before re-occupancy.

(2) Manufacturer's material safety data sheets (MSD) shall be maintained at the site for all products used in the project. MSDS must be provided to anyone who requests them. MSDS indicate chemicals used in the product, product toxicity, typical side effects of exposure to the product and safe procedures for use of the product.

(k) *Asbestos abatement protocols.* All asbestos abatement projects shall comply with all applicable Federal and State laws including but not limited to the New York State Department of Labor industrial code rule 56 (12 NYCRR 56), and the Federal Asbestos Hazard Emergency Response Act (AHERA), 40 CFR part 763 (Code of Federal Regulations, 1998 Edition, Superintendent of Public Documents, U.S. Government Printing Office, Washington, DC 20402; 1998; available at the Office of Facilities Planning, Education Building Annex, Room 1060, State Education Department, Albany, NY 12234). Large and small asbestos projects as defined by 12 NYCRR 56 shall not be performed while the building is occupied. Minor asbestos projects defined by 12 NYCRR 56 as an asbestos project involving the removal, disturbance, repair, encapsulation, enclosure or handling of 10 square feet or less of asbestos or asbestos material, or 25 linear feet or less of asbestos or asbestos material may be performed in unoccupied areas of an occupied building in accordance with the above referenced regulations.

(l) *Lead paint.* Any construction or maintenance operations which will disturb lead based paint will require abatement of those areas pursuant to protocols detailed in the "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing" (June 1995; U.S. Department of Housing and Urban Development, Washington, D.C. 20410; available at the Office of Facilities Planning, Education Building Annex, Room 1060, State Education Department, Albany, NY 12234). All areas scheduled for construction as well as areas of flaking and peeling paint shall be tested for the presence of lead and abated or encapsulated in accordance with the above noted guidelines.

(m) *Radon.* Districts shall take responsibility to be aware of the geological potential for high levels of radon and to test and mitigate as appropriate. This information is available from the New York State Department of Health Radon Measurement Database.

(n) *Post construction inspection.* The school district or board of cooperative educational services shall provide the opportunity for a walk-through inspection by the health and safety committee members to confirm that the area is ready to be reopened for use.

### Historical Note

Sec. repealed, filed April 29, 1975; new filed June 27, 1977; amd. filed June 18, 1996; renum. 155.9, new filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.6 School facility report cards.

(a) Commencing January 1, 2001 and each year thereafter, every school district and board of cooperative educational services shall prepare a school facility report card for each occupied school building. In the case of the New York City School District, the Chancellor of the City School District shall prepare school facility report cards for facilities of community school districts and of the central board.

(b) The school facility report card for each building shall be reviewed annually by the board of education or board of cooperative educational services. The board of education or board of cooperative educational services shall report in a public meeting or, in the case of the New York City School District, in public meetings held in each community school district on the status of each item set forth in subdivision (c) of this section for each facility located in the district in which the public meeting is held.

(c) The school facility report card shall contain the following information in a format prescribed by the commissioner:

(1) building age;

(2) building size;

(3) enrollment by building;

(4) rated capacity of the building;

(5) list of program spaces;

(6) probable useful life of the building;

(7) five-year building condition survey results;

(8) annual building visual inspection results;

(9) school building safety rating;

(10) certificate of occupancy status and expiration date;

(11) five-year capital facilities plan status;

(12) estimated costs to restore the school buildings to a state of good repair;

(13) estimated costs to keep the building in a state of good repair;

(14) projected operations and maintenance spending for the current school year;

(15) need for routine maintenance, repairs, rehabilitation, reconstruction, construction and other improvements;

(16) estimated energy costs for the current school year;

(17) a description of Health and Safety Committee activities; and

(18) the following environmental information:

(i) status of the Federal Asbestos Hazard Emergency Response Act (AHERA) plan;

(ii) status of measures taken to assure acceptable indoor air quality;

(iii) status of any required lead testing;

(iv) status of any required radon testing;

(v) status of the district's integrated pest management program; and

(vi) name of the right-to-know designee for the building.

**Historical Note**

Sec. filed April 28, 1971; renum. 155.10, new filed Sept. 21, 1999 eff. Oct. 7, 1999.

### § 155.7 Health and safety in existing educational facilities.

Facilities in school districts, other than city school districts in cities having 125,000 inhabitants or more, shall meet the following requirements and, in particular instances, such other requirements as may be deemed necessary by the commissioner to insure the health and safety and accident protection of occupants.

(a) *Exits.* (1) There shall be at least two means of egress remote from each other, leading from each floor occupied by pupils, including basements.

(i) When pupils enter into a corridor, there shall be a choice of two unobstructed means of egress in different directions.

(ii) Handrails shall be provided on at least one side of stairways, and on both sides of stairways 88 inches or more in width.

(iii) There shall be no storage under any stairs or landings unless the enclosure is of approved fire-resistant construction.

(iv) Provision of fire escapes of approved design may be required where other exits are determined to be inadequate for fire safety.

(2) Dead-end corridor pockets shall not exceed a maximum depth of 1½times the width of the pocket or 1½ times the width of the corridor, whichever is less, unless otherwise approved by the commissioner.

(3) Corridors and exitways shall be kept clear and free of obstructions at all times.

(4) Fixed and portable security gates shall not be located or used where they will obstruct exits or create dead-end conditions for occupied spaces.

(5) Every space of pupil occupancy over 500 square feet in area shall have two separate means of egress from such space. A *space of pupil occupancy* is any room or self-contained space housing pupils on a regular basis, other than a place of assembly or small rooms where no more than 10 pupils are under direct, responsible, adult supervision. Each means of egress shall be in a separate smoke zone, unless immediately adjacent to an approved exit. The primary exit is commonly the opening to the corridor. The second means of egress may be a door opening into a separate smoke zone, or a door directly to the exterior, or a window of such size and design that will facilitate egress, or a door providing egress through adjacent spaces where specifically approved.

(i) Any point in a space of pupil occupancy shall not exceed a maximum of 50 feet straight-line distance to an exit, unless otherwise approved by the commissioner. Any additional exit necessary to satisfy this requirement shall be remote and may be required to be directly to the exterior.

(ii) When spaces of pupil occupancy are defined in an open area by wardrobes, cabinetry and other furniture which does not present obstructions to egress and which allows students to circulate freely from one space to another, the total open space is considered, for exiting purposes, as a single space. Exits from such open-planned space shall meet requirements determined by the commissioner.

(6) Required emergency egress windows shall be of a size and design, including hardware and, in appropriate instances, steps or ladder to high sills, that will permit and facilitate emergency egress. Such windows shall be free of obstructing screens or storm sash.

(i) The minimum clear opening area for such windows shall be six square feet, with a minimum dimension of 24 inches, unless otherwise approved by the commissioner.

(ii) At least one such window in each space of pupil occupancy shall be marked with an appropriate sign identifying it as an emergency egress window.

(7) Places of assembly. A place of assembly is any area used for the assembly of 100 or more persons, and spaces over 1800 square feet in area used for the assembling of persons. A place of assembly shall have at least two exits remote from each other.

(i) Maximum occupancy for places of assembly shall be based on the number and size of existing approved exits on the basis of 50 persons for each one-half exit unit of 11 inches. Where existing exits are inadequate for the occupancy capacity of a place of assembly, or when directed by the commissioner, signs restricting the number of occupants shall be conspicuously posted at each exit location. Signs shall read in red letters on white background:

"MAXIMUM OCCUPANCY —3" high, 3/4" stroke

NOT TO EXCEED —2" high, 1/2" stroke

XXX PERSONS" —3" high, 3/4" stroke

(8) Courtyards with completely enclosed perimeters are areas of possible pupil occupancy and must be provided with exits as a space of pupil occupancy and as follows, unless otherwise approved by the commissioner:

(i) Enclosed courts up to a 700-square foot area shall have at least one exit equipped with hardware of a type which will always permit the door to be opened from the court side without the use of a key.

(ii) Enclosed courts of more than a 700-square foot area shall have at least two exits, remote from each other, equipped with hardware of a type which will always permit the door to be opened from the court side without the use of a key.

(9) Hardware. (i) All door hardware from spaces of pupil occupancy shall be of a type that will always permit the door to be opened from within the space without the use of a key.

(ii) All exterior and interior doors in exitways, and exit doors from places of assembly shall have panic hardware, except that panic hardware is not required for push/pull interior exit doors if these doors have nonlatching hardware. Panic hardware shall not be required for exterior corridor doors serving less than three classrooms or for doors serving only service areas such as boiler room, kitchen or storerooms.

(iii) Exit doors shall not be locked or chained or otherwise rendered inoperable from the inside at any time.

(b) *Smoke and fire control.* As used in this subdivision, the terms Class "A", "B" or "C" refer to types of construction which are defined by subdivision 11 of section 11 of the Local Finance Law.

(1) In Class "B" and Class "C" buildings of two stories or more, unless otherwise approved, stairs shall be enclosed at each floor level and every floor shall be separated from levels above and below by stair enclosures and/or smoke barriers constructed to obstruct effectively the passage of smoke and fumes, or every space of pupil occupancy shall be provided with direct exit to the exterior. In appropriate instances, alternate means of egress may be required and stairway enclosures in Class "A" construction may be required.

(2) Class "B" and Class "C" buildings shall not have places of assembly above the first floor, except in a Class "B" building a written exception may be granted where it is determined by the commissioner that adequate exits exist.

(3) In appropriate instances, doors, walls and ceilings of places of assembly and exitways (corridors, stairs, vestibules, etc.) may be required to be finished with fire retardant materials or coatings.

(4) Stairway enclosures required by paragraph (1) of this subdivision and smoke barriers required by paragraph (5) of subdivision (a) of this section shall be constructed of noncombustible materials of such design and detail to obstruct effectively the passage of smoke and fumes.

(i) Doors in stair enclosures and smoke barriers shall be metal, metal covered, approved treated wood construction, or solid bonded core wood doors not less than 1¾ inches thick.

(ii) Glazing in doors, sidelights and frames shall be one-quarter inch wire glass.

(iii) Such doors shall swing in the direction of egress, with no latching or locking devices unless operated by panic hardware. Double-acting hinged doors are not permitted and corridor pockets opposing swing of doors shall conform to the provisions of paragraph (2) of subdivision (a) of this section.

(iv) Such doors shall be self-closing and maintained in a normally closed position unless approved automatic release devices are provided, whereby upon interruption of an electrical circuit, the door is released and becomes self-closing. The electrical circuit shall be positively interrupted by operation of an approved smoke detection system and/or activation of the building fire alarm system. Fusible links shall not be used to hold open such doors.

(5) Wood floors shall not be treated or finished with oil. Floors so finished previously shall be cleaned and refinished with a penetrating seal.

(6) Fire extinguishers shall be located so that no point in a corridor, lobby or stair is more than 120 feet from an extinguisher. Fire extinguishers shall also be placed readily accessible to auditorium stages, shops, cafeterias and kitchens, boiler rooms, science labs and accessible from other places which are possible sources of fire. Fire extinguishers shall bear the Underwriter's label and be of a type most suitable for the kind of fire most likely to occur in a given area.

(7) Fire-resistive (hourly rated) floors, interior walls and doors, and ceilings shall be provided at the following spaces unless otherwise approved by the commissioner. Those spaces

having a roof over the entire space may have roof construction and ceilings of nonrated fire-resistive materials.

(i) Two-hour fire-rated construction with 1½ hour fire-rated, self-closing fire doors are required at:

(*a*) boiler, heater or furnace rooms;

(*b*) refrigeration, electrical and equipment rooms;

(*c*) incinerator rooms;

(*d*) storerooms for fuel, flammable liquids and gas powered equipment; and

(*e*) transformer vaults.

(ii) Required fire doors shall be maintained in a normally closed position and not held open by fusible links.

(iii) Combustible attic space shall not be used for storage.

(c) *Accident protection.* (1) Glazing of panels and doors shall be with safety glazing materials as follows, unless glazed areas are protected by approved grilles or rails:

(i) interior exit doors, exterior exit doors and immediately adjacent sidelights, except where glazing is 48 inches or more above the floor;

(ii) all glazed panels where glazing is within 18 inches of the floor, or platform level of music-room type risers;

(iii) gymnasiums and playrooms and elsewhere where subject to physical abuse;

(iv) acceptable safety glazing materials shall be at least one-quarter inch thick wire glass, one-quarter inch tempered (heat treated) glass, one-quarter inch laminated safety glass, or approved plastic materials.

(2) Glazed doors and sidelights within six feet of such doors shall be marked by appropriate means in accord with the provisions of Part 47 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York, except marking on door and/or sidelight is not required:

(i) where less than 80 percent of the area of the door or sidelight above a reference line 18 inches above the floor is glazed;

(ii) where width of sidelight is not more than 20 inches, with 1 3/4 inch minimum opaque stiles;

(iii) where floor treatment a distance of three feet out from a sidelight will deter approach;

(iv) where sidelights are supported on 18-inch minimum height opaque sill and wall construction;

(v) where sidelights are protected by approved 18-inch minimum height permanent barriers such as benches, planters or guardrails, extending across at least two thirds of the sidelight.

(3) Window cleaning. Safety provisions shall be made for persons engaged in window cleaning. Windows shall be cleaned from approved safe surfaces, windowsills or ledges, boatswain's chairs or scaffolds, all as defined in Part 21 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

(i) A safe surface is a place where the cleaner is working not over six feet off the floor or grade and not over three feet above a stair run. Ladders may be used generally when the top of the window is not over 35 feet above grade or floor. Windowsills and ledges may be used when the window openings are provided with approved anchors for use with safety belts. Approved boatswain's chairs and scaffolds also may be used.

(d) ***Mechanical.*** Mechanical equipment, heat-producing and cooling equipment, auxiliary apparatus and controls, and installation and use of same, shall be such as will insure safe operation in accord with applicable recognized standards, as determined by the commissioner, and be consistent with efficient energy consumption.

(1) Gas and oil fuel-burning equipment having a capacity of over 400,000 BTU per hour shall be provided with electronic flame safeguard controls which, upon flame failure, shall normally respond in two to four seconds to cut off fuel supply through the burner and main fuel valve.

(2) All primary controls for fuel-burning equipment shall operate on a 120-volt, single-phase grounded circuit. Such controls generally include the hold-in coil of the motor starter, the solenoid coil for the pilot valve, the solenoid coil for the main fuel valve or the actuator for the motorized fuel valve, the ignition transformer and the modulator transformer.

(3) Direct-fired fuel-burning heating units shall not be used in any space of pupil occupancy.

(4) Unused duct work shall be sealed off at each floor level with fire-resistive materials.

(5) Ventilation with fresh air shall be available in all occupied spaces.

(e) *Water and sanitation.* (1) An adequate supply of safe, potable water for drinking shall be dispensed from approved sanitary drinking fountains.

(2) Toilet rooms for boys and girls, with flush toilets and wash sinks which are connected to an adequate water supply under pressure, and connected to an approved individual or public sewage disposal system, shall be provided.

(3) No source of water supply, nor sewage disposal system, shall be used which has not been approved by the appropriate agency of the State Department of Health or Department of Environmental Conservation.

(f) *Gas.* (1) Gas entering a school building shall be low-pressure gas.

(2) Gas transmission and distribution piping shall meet the requirements of the Public Service Commission.

(g) *Electrical.* Electrical equipment and auxiliary apparatus and controls, and installation and use of same, shall be such as will insure safe operation in accord with applicable recognized standards, as determined by the commissioner, and be consistent with efficient energy consumption.

(1) Suitable and sufficient artificial light shall be provided for the visual tasks being performed.

(2) Exit lights. School buildings shall be provided with exit lights to identify building exits, stairs, corridors, and exits from places of assembly, and to designate the path of travel to the exterior, except school buildings having six or less classroom areas may have exit signs in place of exit lights.

(i) The word "EXIT" shall be in letters not less than 4 1/2 inches high and strokes not less than 3/4 inches wide.

(ii) Exit lights shall be circuited and wired to minimize the possibility of interruption.

(3) Emergency lighting. Automatic emergency lighting systems shall be provided for places of assembly exceeding an area of 1800 square feet, and for all exitways leading from such areas. Such areas include all-purpose rooms, auditoriums, cafeterias, group-instruction rooms, playrooms and gymnasiums, swimming pools and other combination places of assembly.

(4) Fire alarm. (i) School buildings of seven or more classroom areas shall be equipped with a manually operated electric fire-alarm system, which may include automatic smoke and/or fire detection, which will continue to sound the alarm until the tripped station has been restored to normal operation or, in an existing system, has completed a cycle of not less than 30 seconds.

(ii) School buildings of one to six classroom areas shall be equipped with either a manual, hand or electric, fire alarm which is capable of being sounded for such a period of time as will insure evacuation of the building, or an electric fire-alarm system as described in subparagraph (i) of this paragraph.

(iii) School buildings within fire districts having an electrically operated, street-located general municipal fire-alarm box system shall have, wherever practical, the school building fire-alarm system interconnected to the municipal system, so that sounding of the school building fire-alarm system automatically gives the alarm to the fire department affording protection to the school building. Wherever practical, a fire-alarm box compatible with the municipal system, which will sound the alarm of the school building system, shall be accessibly located on the site or on the school building.

(5) Telephone. A telephone which can be used in the case of emergency shall be provided in all buildings having pupil occupancy.

(h) *Additions and alterations.* In the case of additions to or alterations of an existing facility, the requirements of this section must be continuously maintained during the construction period, or provisions made to provide equivalent safety to the school-district-occupied portions of the facility.

(i) Facilities shall be operated and maintained to provide effectively for the accident protection and life safety of occupants, to reduce exposure to property loss by fire, and to assure efficient use of natural resources.

(j) When, based on these regulations, it is the judgment of the commissioner that the general conditions of a school building, or any part thereof, indicate that it would be detrimental to the health and safety of occupants, the commissioner may designate an area or areas of the building as unusable for pupil occupancy or may limit the number of occupants thereof.

**Historical Note**

Sec. filed Jan. 29, 1973; amds. filed: Feb. 28, 1974; Feb. 26, 1991; renum. 155.11, new added by renum. 155.3, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.8 Fire and building safety inspections.

(a) All buildings which are owned, operated or leased by a public school district or board of cooperative educational services shall be inspected for fire safety at least once annually, pursuant to a schedule determined by the commissioner, or at any other time deemed necessary by the commissioner. Any cost of such inspection shall be borne by the school district or board of cooperative educational services.

(b) All inspections shall be performed, within a period of time determined by the commissioner, by an inspector who is qualified pursuant to procedures established by the State Fire Administrator. The report of the inspection shall be on a form supplied by the commissioner.

(c) Any violation of the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250) or of this Part shall be corrected immediately unless it is impracticable to do so. Violations which are not corrected immediately shall be corrected within a period of time approved by the commissioner.

(d) Where a board of education or board of cooperative educational services is required to convene meetings pursuant to section 807-a(5)(e) of the Education Law, the board shall:

(1) review each nonconformance with the requirements of section 155.3 of this Part or of 9 NYCRR Parts 1150 through 1197 recorded on the report during the fire inspection;

(2) identify all such nonconformances which have not been corrected by the date of the meeting; and

(3) adopt a plan, in a form prescribed by the commissioner, for correcting all such nonconformances.

(e) No building which is owned, operated or leased by a board of education or a board of cooperative educational services shall be occupied or otherwise used unless the building has a valid certificate of occupancy issued by the commissioner.

(1) A certificate of occupancy will be issued by the commissioner following the annual inspection, if the inspection indicates the building is suitable for occupancy and free of violations of the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250) and of this Part.

(2) The commissioner may issue a temporary certificate of occupancy at any time if the building is suitable for occupancy and if the board of education or board of cooperative educational services has adopted a plan, subsequently approved by the commissioner, for correcting all violations, pursuant to subdivision (c) of this section.

(3) A certificate of occupancy, a temporary certificate or a building permit may be denied or revoked for any one of the following reasons:

(i) failure to comply with any provision of this Part;

(ii) failure to comply with any provisions of the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250);

(iii) failure to comply with the provisions of section 807-a of the Education Law;

(iv) failure to file an annual or other fire safety inspection report in a timely manner;

(v) failure to correct and/or plan for correction of any nonconformance with the requirements of section 155.3 of this Part, or of 9 NYCRR Parts 1150 through 1197, which appears on the fire safety inspection report in a timely manner;

(vi) existence of any nonconformance with the requirements of section 155.3 of this Part, or of 9 NYCRR Parts 1150 through 1197, which appears on the fire safety report and which indicates that a building is not suitable for occupancy or intended use;

(vii) repeated violations of the State Uniform Fire Prevention and Building Code (9 NYCRR Parts 600 through 1250) or this Part; or

(viii) violation of other health or safety standards, imposed by law or regulation, which indicate that a building is not suitable for occupancy or intended use.

**Historical Note**

Sec. filed Nov. 27, 1974; amd. filed April 25, 1978; repealed, new filed March 30, 1993; amd. filed April 19, 1994; renum. 155.12, new added by renum. 155.4, filed Sept. 21, 1999; amd. filed Nov. 14, 2000 eff. Nov. 30, 2000.

## § 155.9 Environmental quality review.

School districts shall follow the procedures in 6 NYCRR Part 617 in connection with any action proposed by such districts which requires approval of the commissioner pursuant to Education Law, sections 408 and 1950. As used in this section, *school district* shall mean any school district, other than school districts in cities having one million inhabitants or more, and any board of cooperative educational services.

**Historical Note**

Sec. filed Sept. 29, 1980; amds. filed: Sept. 30, 1981; July 26, 1985 as emergency measure; Sept. 24, 1985; renum. 155.13, new added by renum. 155.5, filed Sept. 21, 1999; amd. filed Nov. 14, 2000 eff. Nov. 30, 2000.

## § 155.10 School swimming pools.

Use of school swimming pools shall at all times be under the personal supervision of a lifeguard possessing, as a minimum qualification, a current senior lifesaving certificate from the American National Red Cross or a equivalent certifying agency approved by the State Commissioner of Health.

**Historical Note**

Sec. filed March 28, 1983; renum. 155.14, new added by renum. 155.6, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.11 Acquisition of existing buildings.

(a) Any existing school building or school buildings shall be appraised as school buildings, and the land on which they are situated shall be appraised as school sites by the State Board of Equalization and Assessment.

(b) The value of any existing building not used for school purposes shall be determined by referring to the assessment roll or rolls on which the property is located or by an appraisal caused to be made by the board of education.

(c) An estimate shall be made of the cost of any necessary renovation due to the age and condition of the building by an engineer or architect licensed to practice in the State of New York and retained by the school district contemplating the purchase of an existing building.

(d) The combined costs of acquisition and renovation due to the age and condition of the building shall not exceed the cost, estimated by an engineer or architect licensed to practice in the State of New York, to construct a new building having comparable features on a comparable site. Any apportionment for the above acquisition and renovation shall be based on the maximum cost allowance determined in accordance with the provisions of subdivision 6 of section 3602 of the Education Law.

(e) Any proposed renovation of such existing structure shall be undertaken only with the prior approval of the Commissioner of Education and shall comply with applicable provisions of sections 155.1 and 155.3 of this Part.

**Historical Note**

Sec. filed Feb. 28, 1984; renum. 155.15, new added by renum. 155.7, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.12 Lease approval and building aid for leased school buildings and facilities by school districts.

(a) *Definitions.* As used in this section:

(1) *Annual lease* means a lease of real property, the term of which is no greater than one school year, which terminates no later than June 30th.

(2) *Multi-year lease* means a lease of real property, the term of which is greater than one school year, which terminates no later than June 30th of any school year.

(b) *Approval of leases outside of New York City.* To obtain prior approval of a lease pursuant to sections 403-b(1)(c), 2503(8) and/or 2554(6) of the Education Law, the board of education of a union free, central, central high school or city school district other than the city school district of the City of New York shall submit the following to the commissioner:

(1) the proposed lease, which shall be an annual lease, multi-year lease or an amendment or extension thereof, shall include the following information:

(i) the complete legal names and addresses of all parties and the address of the leased property;

(ii) the lease term; and

(iii) the amount, frequency and due dates for lease payments, including the total of payments for the duration of the lease term;

(2) to show need, a copy of the district's updated long-range facilities plan required pursuant to section 155.1 of this Part which includes the proposed leased space as well as all other planned acquisitions, disposals and leasing of buildings for school purposes during the period of the plan; and

(3) to show that the proposed leased facility meets all applicable standards for the health, safety and comfort of the occupants, is educationally adequate and where the facility is located on its site:

(i) a request for approval of use on the form prescribed by the commissioner;

(ii) concerning State Uniform Fire Prevention and Building Code conformance (9 NYCRR Parts 600-1250);

(*a*) a copy of the current certificate of occupancy issued by the local code enforcement agency; or

(*b*) certification by a licensed architect/engineer that the whole building, as well as the space being used, complies with applicable provisions of Chapter C of the Uniform Fire Prevention and Building Code (9 NYCRR Parts 600-1250);

(iii) the fire safety report required by section 155.4 of this Part:

(*a*) with no nonconformances; or

(*b*) in the case of nonconformances, certification that correction of the nonconformances are part of a capital project submitted with the lease approval request;

(iv) a site plan; and

(v) floor plan(s); and

(4) to indicate the location of the leased facility, certification by the superintendent of schools that:

(i) the leased school/facility is located within the district but not on district-owned property; or

(ii) the leased school/facility is owned by and is located in a neighboring union free or central school district. The distance between the two districts in miles shall be provided by the superintendent;

(5) certification by an attorney representing the board of education that:

(i) the board has taken proper procedural steps to authorize the lease;

(ii) the initial term of the lease, not including any renewals thereof, does not exceed the period of probable usefulness that would be prescribed for such building or facilities by the Local Finance Law if the building or facility were owned by a school district;

(iii) voter approval has been obtained where required by law:

(*a*) for a lease longer than five years;

(*b*) in the case of renewals; and

(*c*) for any capital project to be undertaken in a leased building or facility;

(iv) the lease does not include an option to buy;

(v) the lease includes a provision that the lease shall be void and unenforceable if entered into in violation of section 801 of the General Municipal Law or section 410 of the Education Law; and

(vi) the lease payments or other annual payment under the lease does not include the costs of heat, electricity, water or other utilities or the costs of operation or maintenance of the leased facility;

(6) for a district seeking aid for lease expense pursuant to subdivision 6 of section 3602 of the Education Law, a certification by the superintendent of schools that:

(i) the leased school or facility meets requirements for access by individuals with disabilities to both facilities and programs by complying with section 200.2 of this Title; and

(ii) the leased space will be used to house programs for pupils in grades preK-12, who are enrolled in any prekindergarten or nursery school program offered by the school district pursuant to section 1712, 2514 or 2555 of the Education Law or who are over five and under 21 years of age and who have not received a high school diploma, with minimal associated administrative and support service space.

(c) *Approval of capital projects outside of New York City.* To obtain prior approval of a capital project in a leased building or leased facility during the term of the lease, pursuant to sections 403-b(1)(b), 2503(8) and/or 2554(6) of the Education Law, a board of education of a union free, central, central high school, or city school district other than the city school district of the City of New York shall submit the following to the commissioner:

(1) an explanation of the need for the capital project in light of the district's long-range facilities plan, submitted pursuant to paragraph (b)(2) of this section and updated to reflect the need for the proposed capital project; and

(2) certification:

(i) that the lease is for a term of at least 10 years subsequent to the general contract for such construction, reconstruction, rehabilitation or improvement; and

(ii) that where required by law, approval of the voters of the school district which will become the lessee has been obtained;

(3) for capital projects proposed in a school building leased from another school district, plans and specifications in accordance with section 155.2 of this Part;

(4) for capital projects proposed in a school building leased from a person, partnership or corporation other than another school district, submit for review for educational adequacy and conformance with the requirements of this Part, plans and specifications proposed to be submitted to the local building authority for a building permit.

(d) *Approval of leases in the City of New York.* To obtain prior approval of a lease pursuant to section 2554(6) of the Education Law, the board of education of the city school district of the City of New York shall submit the following to the commissioner:

(1) the proposed lease, which shall be an annual lease, multi-year lease or an amendment or extension thereof, and shall include the following information:

(i) the complete legal names and addresses of all parties and the address of the leased property;

(ii) the lease term; and

(iii) the amount, frequency and due dates for lease payments, including the total of payments for the duration of the lease term;

(2) to show need, a copy of the district's current five year facilities plan, or other long-range facilities plan as applicable, that is consistent with section 155.1 of this Part, and includes the proposed lease as well as all other planned acquisitions, disposals and leasing of buildings or school purposes during the period of the plan;

(3) to show that the proposed leased facility meets all applicable standards for the health, safety and comfort of the occupants, is educationally adequate and where the facility is located on its site, submit:

(i) a request for approval of use on the form prescribed by the commissioner;

(ii) a copy of current certificate of occupancy issued by the local code enforcement agency;

(iii) a site plan; and

(iv) floor plan(s);

(4) certification by an attorney representing the board of education that:

(i) the board has taken proper procedural steps to authorize the lease;

(ii) the initial term of the lease, not including any renewals thereof, does not exceed the period of probable usefulness that would be prescribed for such building or facilities by the Local Finance Law if the building or facility were owned by a school district;

(iii) voter approval has been obtained where required by law:

(*a*) for a lease longer than five years;

(*b*) in the case of renewals; and

(*c*) for any capital project to be undertaken in a leased building or facility;

(iv) the lease does not include an option to buy;

(v) the lease includes a provision that the lease shall be void and unenforceable if entered into in violation of section 801 of the General Municipal Law or section 410 of the Education Law; and

(vi) the lease payments or other annual payment under the lease do not include the costs of heat, electricity, water or other utilities or the costs of operation or maintenance of the leased facility;

(5) for the district seeking aid for lease expense pursuant to subdivision 6 of section 3602 of the Education Law, a certification by the superintendent of schools that:

(i) the leased school or facility meets requirements for access by individuals with disabilities to both facilities and programs by complying with section 200.2 of this Title; and

(ii) leased space will be used to house programs for pupils in grades preK-12, who are enrolled in any prekindergarten or nursery school program offered by the school district pursuant to section 1712, 2514 or 2555 of the Education Law or who are over five and under 21 years of age and who have not received a high school diploma, with minimal associated administrative and support service space.

(e) *Approval of capital projects in New York City.* To obtain prior approval of a capital project in a leased building or facility during the term of the lease pursuant to sections 403-b(1)(b) and 2554(6) of the Education Law, the board of education of the City of New York shall submit the following to the commissioner:

(1) an explanation of the need for the capital project in light of the district's long-range facilities plan, submitted pursuant to paragraph (d)(2) of this section and updated to reflect the need for the proposed capital project;

(2) provide certification:

(i) that the lease is for a term of at least 10 years subsequent to the general contract for such construction, reconstruction, rehabilitation or improvement;

(3) for capital projects proposed in a school building leased from another school district, submit plans and specifications in accordance with section 155.2 of this Part; or

(4) for capital projects proposed in a school building leased from a person, partnership or corporation other than another school district, submit for review for educational adequacy and conformance with the requirements of this Part, plans and specifications proposed to be submitted to the local building authority for a building permit.

(f) Following the completion of a capital project, submitted to the commissioner pursuant to subdivision (c) or (e) of this section, a new certificate of occupancy issued by the local building authority shall be submitted together with school district certification that the work was done in accordance with submitted plans and specifications. Where the work deviates from the submitted plans and specifications, as-built drawings shall be submitted for review.

(g) Apportionment of building aid under subdivision 6 of section 3602 of the Education Law for leases approved by the commissioner pursuant to section 403-b, subdivision 8 of section 2503, or subdivision 6 of section 2554 of the Education Law shall be apportioned pursuant to provisions of this subdivision.

(1) Any apportionment for an approved lease with a term of 15 years or more shall be based on the maximum cost allowance determined in accordance with the provisions of subdivision 6 of section 3602 of the Education Law. Such apportionment shall be paid on each annual lease payment until the total of such annual lease payments equals the maximum cost allowance. No apportionment shall be paid for annual lease payments made after the sum of such annual lease payments exceeds the maximum cost allowance.

(2) Any apportionment for an approved lease with a term of less than 15 years shall be based on the product of the maximum cost allowance determined in accordance with the provisions of subdivision 6 of section 3602 of the Education Law and the quotient of the number of years in the term of the lease divided by 15. Such apportionment shall be paid on each annual lease payment until the total of such annual lease payments equals such product.

No apportionment shall be paid for annual lease payments after the sum of such annual payments exceeds such product.

(3) The lease payment schedule shall be structured so that no annual payment is less than 50 percent of any prior annual payment.

**Historical Note**

Sec. filed July 26, 1985 as emergency measure; Sept. 24, 1985; renum. 155.16, new added by renum. 155.8, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.13 Apportionment for asbestos projects.

Funds available to public school districts, specifically for the purpose of building projects designed to eliminate asbestos hazards from school facilities, shall be apportioned pursuant to provisions of this section and in accordance with article 9-A of the Education Law, except that school asbestos hazard abatement grants authorized by section 437 of the Education Law, shall be apportioned pursuant to section 155.12 of this Part.

(a) Such funds shall be available for projects for which an application, in form and substance as required by the commissioner, is submitted to the Education Department by December 1st of the school year for which such funds are appropriated. Each such application shall include, but shall not be limited to, the following assurances by the board of education of the public school district:

(1) that an imminent health hazard due to the presence of asbestos, as such terms are defined in section 432 of the Education Law, exists;

(2) that the project is designed to remove, contain or encapsulate asbestos;

(3) that, contingent upon approval of the project pursuant to this section, a building project application, including plans and specifications, will be submitted to the Education Department no later than April 1st of the school year for which such funds are appropriated;

(4) that, contingent upon approval of the project pursuant to this section, construction contracts for the project will be signed by the board of education no later than May 1st of the school year for which such funds are appropriated;

(5) that, contingent upon approval of the project pursuant to this section, an interim expenditure report, in a form prescribed by the commissioner, will be submitted to the Education Department upon signing of the construction contract; and

(6) that local funds required to successfully complete the project will be available in a timely manner or, where applicable, that a proposition authorizing the expenditure of funds for such purpose will be submitted to the voters of the school district.

(b) All projects shall meet all requirements of subdivision (a) of this section.

(c) All projects shall meet all requirements of building projects required by section 408 of the Education Law and this Part.

(d) The amount of each such apportionment shall be for the same percentage of total project costs. Such percentage will be determined by the commissioner; provided, however, that such percentage shall not be less than 40 *per centum* nor more than 50 *per centum* of the total project cost.

(e) The priority of approval of all projects which meet the requirements of this section shall be based upon the building aid ratio of each school district selected for purposes of building aid in the current year. Projects from districts with the highest aid ratios shall be approved first, and subsequent projects shall be approved according to descending order of such aid ratios. In the case of projects from districts with identical aid ratios, the commissioner will, to the extent that funds are available, approve projects for the districts of greatest need as determined by the commissioner.

(f) Payment of the apportionment shall be made upon certification by the district that a construction contract has been signed for the project. In no case shall an apportionment be paid for projects in which the contract was signed after May 1st of the school year for which such funds are appropriated, except as provided in subdivision (j) of this section.

(g) Each project approved for an apportionment pursuant to the provisions of this section shall also be eligible to receive building aid, pursuant to the provisions of subdivision 6 of section 3602 of Education Law, on the balance of total approved expenditures not aided pursuant to this section.

(h) Not more than 40 *per centum* of the appropriation made available for purposes of this section shall be awarded for projects of the board of education of the city school district of the City of New York. All such projects shall comply with the provisions of this section.

(i) Nothing in this section shall prevent an award of an apportionment pursuant to this section being made for projects already approved by the commissioner, provided those projects otherwise meet the requirements of this section. An application is not required for any such project previously approved.

(j) Notwithstanding the provisions of subdivisions (a) through (i) of this section, upon a finding by the commissioner that all funds available for the purposes specified in this section have not been obligated by contract by May 1st of the school year for which such funds are appropriated, additional awards may be approved at the discretion of the commissioner prior to August 31st of the succeeding school year. Projects for which such additional awards may be approved shall be for the elimination of imminent health hazards caused by the presence of asbestos.

(k) No funds shall be apportioned pursuant to this section unless the school district has authorized the local funds necessary to successfully complete the project.

**Historical Note**

Sec. filed Feb. 22, 1989; renum. 155.17, new added by renum. 155.9, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.14 Leasing of unneeded board of cooperative educational services facilities.

(a) As used in this section, the term *unneeded board of cooperative educational services facilities* shall mean any land, classrooms, offices or buildings, or portions thereof, owned by a board of cooperative educational services which such board has determined will not be needed during the term of the proposed lease.

(b) Pursuant to section 1950(4)(p) of the Education Law, a board of cooperative educational services may lease unneeded facilities to public or private agencies, individuals, partnerships or corporations with the approval of the commissioner.

(c) In order to obtain approval by the Commissioner of Education to lease unneeded facilities:

(1) the board of cooperative educational services shall file three executed copies of the lease agreement with the commissioner at least 30 days prior to the beginning date of the proposed lease period. Such lease agreement shall include, but need not be limited to:

(i) the amount of rental, which shall not be less than fair market value as determined by the board of cooperative educational services;

(ii) the term of the lease, which shall not exceed five years, and any provisions relating to the renewal of such lease;

(iii) a statement of the operation and maintenance services, if any, to be provided by the board of cooperative educational services for the facility during the term of the lease;

(iv) a requirement that any improvements to the leased property by the tenant be approved by the board of cooperative educational services;

(v) indemnification of the board of cooperative educational services against loss or liability as a result of a tenant's occupancy of a leased facility;

(vi) a statement that such lease agreement will not become effective until approved by the Commissioner of Education; and

(vii) any other clauses or appendices which the Commissioner of Education deems to be in the best interest of the board of cooperative educational services.

(2) such lease agreement shall be accompanied by a copy of the resolution of the board of cooperative educational services authorizing such lease, stating the purpose for which the tenant intends to use the leased facility, and providing:

(i) that the board of cooperative educational services has made a study and does not anticipate a need for the leased property during the term of the proposed lease;

(ii) that the annual amount of rental payment is not less than the fair market rental value as determined by such board of cooperative educational services; and

(iii) that such lease is in the best educational and financial interest of the board.

(d) Income received by the board of cooperative educational services from the lease of unneeded facilities shall be included as revenue in such board's administrative budget.

(e) Nothing contained in this section shall prevent the board of cooperative educational services from:

(1) entering into a lease agreement which provides for the cancellation of such lease by such board; and

(2) including, in the lease agreement, requirements concerning the condition of the leased facilities at the conclusion of the lease.

(f) The commissioner may approve a lease of unneeded board of cooperative educational services facilities which does not satisfy all of the provisions of subdivision (c) of this section upon a finding that the conditions of such lease are substantially equivalent to such provisions.

**Historical Note**

Sec. filed Feb. 22, 1989; renum. 155.18, new added by renum. 155.10, filed Sept. 21, 1999 eff. Oct. 7, 1999.

### § 155.15 Leases and contracts for the use of property by boards of cooperative educational services. [Education Law, § 1950]

(a) *Definitions.* As used in this section:

(1) *Property* means land, classrooms, offices, buildings and other specialized facilities.

(2) *Original lease* means the initial agreement between the board and a landlord for the use of real property.

(3) *Annual lease* means a lease of real property, the term of which is no greater than one school year, which terminates no later than June 30th.

(4) *Specialized facilities* means those facilities defined in section 1950(4)(p)(a)(4) of the Education Law.

(5) *Contract* means an agreement entered into by the board for the use of personal property constructed, altered or improved for the educational program of administrative purposes of the board.

(b) With the prior approval of the commissioner, a board of cooperative educational services may enter into either:

(1) annual or multi-year leases and amendments or extensions thereto; or

(2) contracts for the use of personal property and amendments or extensions thereto.

(c) *Leases.* In order to obtain the approval of the commissioner, any original lease shall meet the following conditions:

(1) Any property leased for the educational program purposes of the board shall be in compliance with the requirements of section 155.4 of this Part.

(2) Any alterations or improvements made under a lease shall satisfy the provisions of section 155.2 of this Part.

(3) The lease shall contain the following information:

(i) the complete legal names and addresses of all parties and of the leased property;

(ii) the lease term;

(iii) the amount, frequency and due dates for lease payments;

(iv) the charge basis, whether for all or part of the property and whether per room, per square foot or other basis;

(v) a description of the property and its intended use;

(vi) a list of any services to be furnished by the landlord, including an agreement as to which party will pay utility costs and assessments; and

(vii) signatures—all leases shall be submitted in executed form, properly dated and signed by agents authorized to act for the landlord, the board and any other party.

(4) Any appendices, exhibits, attachments or other supporting documents shall be attached to the lease when submitted for approval. The board shall submit such information as is necessary to enable the commissioner to determine that the lease is in the best educational and financial interests of the board.

(5) Under any multi-year lease, the board shall furnish estimates as to its annual cost of operating the leased property.

(6) Provided that appropriate documentation accompanies the submission of the lease for commissioner's approval, all of the following may be permitted in multi-year leases of property:

(i) escalation clauses;

(ii) renewal options;

(iii) purchase options;

(iv) assignment of rent to third parties;

(v) subleasing to others; and

(vi) using a leased site as the location for relocatable facilities.

(7) The certification of an attorney-at-law shall be required on all multi-year leases, all amendments or extensions thereto, and all annual leases except those with boards of education for portions of buildings to be used for classroom or administrative purposes. Such certification shall accompany the lease when submitted for approval and shall state that the lease and all relevant documents have been examined by the attorney and that:

(i) the attorney is attorney for the board or has been hired as attorney for the purpose of reviewing the lease and any related legal documents and for preparing the certification;

(ii) the board has taken proper procedural steps to authorize the lease and any changes thereto;

(iii) a determination has been made as to whether the lease is subordinate to any existing or future mortgages or the subject of any pending litigation;

(iv) all of the provisions of the lease required or authorized by this section have been examined and conform with Education Law and Regulations of the Commissioner of Education; and

(v) the lease is valid and legally binding under general principles of the Real Property Law.

(d) *Contracts.* In order to obtain the approval of the commissioner, any contract shall meet the following conditions:

(1) Any alterations or improvements involving construction work under the contract shall satisfy the provisions of section 155.2 of this Part.

(2) Whenever a board of cooperative educational services contracts to use personal property for the educational program purposes of the board, such property shall be in compliance with the requirements of section 155.4 of this Part.

(3) No contract shall be approved which contains any provision that personal property, such as a relocatable structure, constructed or situated on land owned or leased by the board shall revert to the board if abandoned and not removed within a specified time after the termination of the contract.

(4) The contract shall contain the following information:

(i) the complete legal names and addresses of all parties and of the personal property;

(ii) the term of the contract;

(iii) the amount, frequency and due dates of contract payments;

(iv) the charge basis, whether for all or part of the property and whether per room, per square foot or other basis;

(v) a description of the property and its intended use;

(vi) a list of any services to be furnished by the owner of the personal property, including an agreement as to which party will pay utility costs and assessments; and

(vii) signatures—all contracts shall be submitted in executed form, properly dated and signed by agents authorized to act for the contractor, the board and any other party.

(5) Provided appropriate documentation accompanies the submission of the contract for the commissioner's approval, all of the following may be permitted in multi-year contracts:

(i) escalation clauses;

(ii) renewal options;

(iii) purchase options; and

(iv) assignment of use payments to third parties.

(6) Such contracts when submitted for commissioner's approval shall be accompanied by the certification of any attorney-at-law that:

(i) the attorney is attorney for the board or has been hired as attorney for the purpose of reviewing the contract, any related legal documents, and for preparing the certification;

(ii) the board has taken proper procedural steps to authorize the contract;

(iii) if construction is to be done on leased property, the board's lease permits same;

(iv) the terms of the construction contract are consistent with those of any preexisting lease, amendment or extension thereto covering said property; and

(v) in the opinion of the attorney, the contract is valid and legally binding.

(e) *Submission of leases and contracts.* (1) All annual leases with boards of education for portions of buildings to be used for classroom or administrative purposes shall be submitted for approval no less than 30 days in advance of the effective date of the lease.

(2) Annual leases requiring certification of an attorney, all multi-year leases and any amendments or extensions thereto, and all contracts shall be submitted for approval no less than 60 days in advance of the effective date of the lease or contract.

(f) In the approval process, the commissioner may require additional supporting detail. Approval may be granted for a variance from any of the specific requirements of this section upon a finding by the commissioner that the requirements of this section have been substantially met.

**Historical Note**

Sec. filed: July 26, 1994 as emergency measure; Sept. 27, 1994; renum. 155.19, new added by renum. 155.11, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.16 School asbestos hazard grant program.

School asbestos hazard grants shall be awarded in accordance with the provisions of section 437 of the Education Law, and this section.

(a) Public school districts, boards of cooperative educational services and those nonpublic schools which provide instruction substantially equivalent to that provided in the public schools may submit grant applications for the approval of the commissioner.

(b) Grant applications shall be in the form prescribed by the commissioner, and shall be filed with the commissioner no later than December 1st of the school year in which the grant is to be awarded. Such application shall include the following assurances by the governing body of the school district, BOCES or nonpublic school applying for a school asbestos hazard grant:

(1) that an imminent hazard to health due to the presence of asbestos, as such terms are defined in section 432 of the Education Law, exists;

(2) that grant funds received will be used exclusively for the abatement of asbestos hazards;

(3) for school district and BOCES applicants only, that, contingent upon approval of the grant application pursuant to this section, a building project application, including plans and specifications, will be submitted to the Education Department no later than April 1st of the school year in which the grant is to be awarded;

(4) for nonpublic school applicants only, that, contingent upon approval of the grant application pursuant to this section, copies of building permits issued for the project by the appropriate authority, or equivalent documentation satisfactory to the commissioner, will be submitted to the Education Department no later than April 1st of the school year in which the grant is to be awarded;

(5) that contingent upon approval of the grant application pursuant to this section, construction contracts for the project will be executed on behalf of the governing body of the applicant no later than May 1st of the school year in which the grant is to be awarded;

(6) that contingent upon approval of the grant application pursuant to this section, all reports required pursuant to subdivision (f) of this section will be submitted to the Education Department in a timely manner; and

(7) that the local funds required to successfully complete the project will be available in a timely manner, or, where applicable, that a proposition authorizing the expenditure of funds for such purpose will be submitted to the voters of the school district.

(c) The commissioner will rank all grant applications according to the degree of imminent hazard to health presented by the asbestos materials, using an exposure assessment scale. The exposure assessment scale shall be based on the nature and magnitude of the existing and potential hazards presented by the asbestos materials, and shall take into account the following factors:

(1) the nature and condition of the asbestos material, including the degree of friability and asbestos content;

(2) the extent of damage to the asbestos material, including water damage;

(3) the exposed surface area;

(4) the accessibility of the asbestos material;

(5) the degree of activity and movement of the material; and

(6) the degree of exposure to an air plenum or direct air stream.

(d) The priority of approval of all grant applications which meet the requirements of thi section shall be based upon their ranking on the exposure assessment scale as established by th commissioner pursuant to subdivision (c) of this section. Grant applications which receive th highest ranking will be approved first, and, subject to the availability of funds, additiona applications will be approved in the descending order of their ranking on the exposure assessmen scale. In the event that two or more applications have identical rankings on the exposur assessment scale and sufficient funds are not available for all such applications, the commissione may, to the extent that funds are available, approve such applications or combination of applica tions as will, in the judgment of the commissioner, result in the abatement of an imminent hazar to the health of the greatest number of persons.

(e) Grants shall be awarded for amounts of 60 percent of approved costs. Costs eligible for approval shall include costs associated with removal, encapsulation or containment of asbestos hazards and other costs incidental to such abatement procedures, including but not limited to the cost of bulk sample and air testing, architectural, engineering and other consultant fees, work site preparation costs, and worker protection costs.

(f) Grant recipient shall submit such reports as are required by the Commissioner of Education, including but not limited to a building project data form SA-139 and a final building project report. The final building project report shall be in a form prescribed by the commissioner and shall be submitted no later than August 1st of the school year next following the school year in which the grant application is approved.

(g) Payment of grants shall be pursuant to the following schedule:

(1) sixty percent of the grant amount will be paid to public school districts and BOCES upon approval by the Commissioner of Education of the final plans and specifications for abatement projects for which grants were awarded;

(2) sixty percent of the grant amount will be paid to nonpublic schools upon receipt by the Education Department of copies of building permits issued for the project by the appropriate authority, or of equivalent documentation satisfactory to the commissioner;

(3) twenty-five percent of the grant amount will be paid upon the receipt and approval by the State Education Department of the building project data form SA-139; and

(4) fifteen percent of the grant amount will be paid upon receipt by the State Education Department of the final building project report form.

(h) Approval may be granted for a variance from any of the requirements of subdivisions (b) through (g) of this section, upon a finding that the requirements of this section will be substantially met.

**Historical Note**

Sec. filed June 11, 1998; renum. 155.20, new added by renum. 155.12, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.17 School safety plans.

(a) *Development of school emergency management plans.* Each board of education of a school district, other than a school district in a city having a population of more than one million inhabitants, and each board of cooperative educational services shall prepare by October 1, 1990, and shall update by October 1st of each succeeding school year, a school emergency management plan as prescribed in this section to insure the safety and health of children and staff and to insure integration and coordination with similar emergency planning at the municipal, county and State levels, which plan, and any amendments thereto, shall remain in effect until the adoption of a comprehensive multi-hazard, district-wide school safety plan and building-level school plans pursuant to subdivisions (b) and (e) of this section, at which time it shall be superseded by such plans. A copy of the plan shall be available in each school district for inspection by the public and shall be made available to the commissioner upon request.

(b) *Development of school safety plans.* Every board of education of a school district, every board of cooperative educational services and county vocational education and extension board and the chancellor of the City School District of the City of New York shall adopt by July 1, 2001, and shall update by July 1st of each succeeding year, a district-wide school safety plan and building-level school safety plans regarding crisis intervention and emergency response and management, provided that in the City School District of the City of New York, such plans shall be adopted by the chancellor of the city school district. Such plans shall be developed by a district-wide school safety team and a building-level school safety team, as such terms are defined in subdivision (c) of this section, and shall be in a form developed by the commissioner in consultation with the Division of Criminal Justice Services, the superintendent of the State Police and any other appropriate State agencies. A school district having only one school building shall develop a single building-level school safety plan, which shall also fulfill all requirements for development of a district-wide plan to insure the safety and health of children and staff and to insure integration and coordination with similar emergency planning at the municipal, county and State levels. Each plan shall be reviewed by the appropriate school safety team on at least an annual basis, and updated as needed.

(c) *Definitions.* As used in this section:

(1) *Educational agencies* means public and nonpublic elementary and secondary schools, public and private nursery schools, approved private schools for the education of students with disabilities as defined in section 200.1(d) of this Title, and public and private schools for the education of preschool children with disabilities.

(2) *Superintendent* means a superintendent of schools or a district superintendent of schools, as appropriate.

(3) *Disaster* means occurrence or imminent threat of widespread or severe damage, injury, or loss of life or property resulting from any natural or manmade causes, such as fire, flood, earthquake, hurricane, tornado, high water, landslide, mudslide, windstorm, wave action, epidemic, air contamination, drought, explosion, water contamination, chemical accident, war or civil disturbance.

(4) *Emergency* means a situation, including but not limited to a disaster, that requires immediate action, occurs unpredictably, and poses a threat of injury or loss of life to students or school personnel or of severe damage to school property.

(5) *Emergency services organization* means a public or private agency, organization or group other than a governmental agency, which provides police, fire, medical, ambulance, rescue, housing or other services for the relief of human suffering, injury or loss of life or property as a result of an emergency.

(6) *School cancellation* means a determination by school officials that a school or schools should not be in session for one or more school days due to an emergency.

(7) *Early dismissal* means returning students to their homes or other appropriate locations before the end of the school day.

(8) *Evacuation* means moving students for their protection from a school building to a predetermined location in response to an emergency.

(9) *Sheltering* means keeping students in school buildings and providing them with shelter when it is deemed safer for students to remain inside rather than to return home or be evacuated.

(10) *Building-level school safety plan* means a building-specific school emergency response plan that addresses crisis intervention, emergency response and management at the building level and has the contents prescribed in paragraph (e)(2) of this section.

(11) *Building-level school safety team* means a building-specific team appointed by the building principal, in accordance with regulations or guidelines prescribed by the board of education, the chancellor in the case of New York City, or other governing body. The building-level team shall include, but not be limited to, representatives of teacher, administrator, and parent organizations, school safety personnel, other school personnel, community members, local law enforcement officials, local ambulance or other emergency response agencies, and any other representatives the school board, chancellor or other governing body deems appropriate.

(12) *District-wide school safety plan* means a comprehensive, multi-hazard school safety plan that covers all school buildings of the school district, BOCES or county vocational education and extension board, that addresses crisis intervention, emergency response and management at the district level and has the contents prescribed in paragraph (e)(1) of this section.

(13) *District-wide school safety team* means a district-wide team appointed by the board of education, the chancellor in the case of New York City, or other governing board. The district-wide team shall include, but not be limited to, representatives of the school board, student, teacher, administrator, and parent organizations, school safety personnel and other school personnel.

(14) *Emergency response team* means a building-specific team designated by the building-level school safety team that includes appropriate school personnel, local law enforcement officials, and representatives from local, regional and/or State emergency response agencies and assists the school community in responding to a serious violent incident or emergency. In a school district in a city having a population of more than one million inhabitants, such emergency response team may be created on the district-level with building-level participation, and such district shall not be required to establish a unique team for each of its schools.

(15) *Post-incident response team* means a building-specific team designated by the building-level school safety team that includes appropriate school personnel, medical personnel, mental health counselors and others who can assist the school community in coping with the aftermath of a serious violent incident or emergency. In a school district in a city having a population of more than one million inhabitants, such post-incident response team may be created on the district-level with building-level participation, and such district shall not be required to establish a unique team for each of its schools.

(16) *School safety plan* means a district-wide school safety plan or a building-level school safety plan.

(17) *Serious violent incident* means an incident of violent criminal conduct that is, or appears to be, life threatening and warrants the evacuation of students and/or staff because of an imminent threat to their safety or health, including, but not limited to: riot, hostage-taking kidnapping and/or the use or threatened use of a firearm, explosive, bomb, incendiary device, chemical or biological weapon, knife or other dangerous instrument capable of causing death or serious injury.

(d) *School emergency management plans.* A school emergency management plan shall be designed to prevent or minimize the effects of emergencies and to coordinate the use of resources, and shall include, but not be limited to:

(1) the identification of sites of potential emergency;

(2) the identification of appropriate responses to emergencies;

(3) a description of the arrangements for obtaining assistance during emergencies from emergency services organizations and local governmental agencies;

(4) a description of procedures to coordinate the use of school district resources and manpower during emergencies, including identification of the officials authorized to make decisions and of the staff members assigned to provide assistance during emergencies;

(5) the identification of district resources which may be available for use during an emergency;

(6) in the case of a school district, a system for informing all educational agencies within such school district of an emergency;

(7) a description of plans for taking the following actions in response to an emergency where appropriate:

(i) school cancellation;

(ii) early dismissal;

(iii) evacuation;

(iv) sheltering; and

(8) in the case of a school district, certain information about each educational agency located in the school district, including information on school population, number of staff, transportation needs and the business and home telephone numbers of key officials of each such agency; and

(9) the procedures for obtaining advice and assistance from local government officials, including the county or city officials responsible for implementation of article 2-B of the Executive Law.

(e) *School safety plans.* District-wide school safety plans and building-level school safety plans shall be designed to prevent or minimize the effects of serious violent incidents and emergencies and to facilitate the coordination of schools and school districts with local and county resources in the event of such incidents or emergencies.

(1) District-wide school safety plans. A district-wide school safety plan shall be developed by the district-wide school safety team and shall include, but not be limited to:

(i) the identification of sites of potential emergency;

(ii) except in a school district in a city having a population of more than one million inhabitants, a description of plans for taking the following actions in response to an emergency where appropriate:

(*a*) school cancellation;

(*b*) early dismissal;

(*c*) evacuation;

(*d*) sheltering;

(iii) policies and procedures for responding to implied or direct threats of violence by students, teachers, other school personnel and visitors to the school;

(iv) policies and procedures for responding to acts of violence by students, teachers, other school personnel and visitors to the school, including consideration of zero-tolerance policies for school violence;

(v) appropriate prevention and intervention strategies, such as:

(*a*) collaborative arrangements with State and local law enforcement officials, designed to ensure that school safety officers and other security personnel are adequately trained, including being trained to de-escalate potentially violent situations, and are effectively and fairly recruited;

(*b*) nonviolent conflict resolution training programs;

(*c*) peer mediation programs and youth courts; and

(*d*) extended day and other school safety programs;

(vi) policies and procedures for contacting appropriate law enforcement officials in the event of a violent incident;

(vii) except in a school district in a city having a population of more than one million inhabitants, a description of the arrangements for obtaining assistance during emergencies from emergency services organizations and local governmental agencies;

(viii) except in a school district in a city having a population of more than one million inhabitants, the procedures for obtaining advice and assistance from local government officials, including the county or city officials responsible for implementation of article 2-B of the Executive Law;

(ix) except in a school district in a city having a population of more than one million inhabitants, the identification of district resources which may be available for use during an emergency;

(x) except in a school district in a city having a population of more than one million inhabitants, a description of procedures to coordinate the use of school district resources and manpower during emergencies, including identification of the officials authorized to make decisions and of the staff members assigned to provide assistance during emergencies;

(xi) policies and procedures for contacting parents, guardians or persons in parental relation to the students of the district in the event of a violent incident or an early dismissal;

(xii) policies and procedures relating to school building security, including, where appropriate, the use of school safety officers and/or security devices or procedures;

(xiii) policies and procedures for the dissemination of informative materials regarding the early detection of potentially violent behaviors, including but not limited to the identification of family, community and environmental factors to teachers, administrators, parents and other persons in parental relation to students of the school district or board, students and other persons deemed appropriate to receive such information;

(xiv) policies and procedures for annual multi-hazard school safety training for staff and students;

(xv) procedures for review and the conduct of drills and other exercises to test components of the emergency response plan, including the use of tabletop exercises, in coordination with local and county emergency responders and preparedness officials;

(xvi) the identification of appropriate responses to emergencies, including protocols for responding to bomb threats, hostage-takings, intrusions and kidnappings;

(xvii) strategies for improving communication among students and between students and staff and reporting of potentially violent incidents, such as the establishment of youth-run programs, peer mediation, conflict resolution, creating a forum or designating a mentor for students concerned with bullying or violence and establishing anonymous reporting mechanisms for school violence;

(xviii) a description of the duties of hall monitors and any other school safety personnel, the training required of all personnel acting in a school security capacity, and the hiring and screening process for all personnel acting in a school security capacity;

(xix) in the case of a school district, except in a school district in a city having more than one million inhabitants, a system for informing all educational agencies within such school district of a disaster; and

(xx) in the case of a school district, except in a school district in a city having more than one million inhabitants, certain information about each educational agency located in the school district, including information on school population, number of staff, transportation needs and the business and home telephone numbers of key officials of each such agency.

(2) School emergency response plan. A school emergency response plan shall be developed by the building-level school safety team and shall include the following elements:

(i) policies and procedures for the safe evacuation of students, teachers, other school personnel and visitors to the school in the event of a serious violent incident or other emergency which may occur before, during or after school hours, which shall include evacuation routes and shelter sites and procedures for addressing medical needs, transportation and emergency notification to persons in parental relation to a student;

(ii) designation of an emergency response team, other appropriate incident response teams, and a post-incident response team;

(iii) procedures for assuring that crisis response, fire and law enforcement officials have access to floor plans, blueprints, schematics or other maps of the school interior, school grounds and road maps of the immediate surrounding area;

(iv) establishment of internal and external communication systems in emergencies;

(v) definition of the chain of command in a manner consistent with the National Interagency Incident Management System (NIMS)/Incident Command System (ICS);

(vi) coordination of the school safety plan with the statewide plan for disaster mental health services to assure that the school has access to Federal, State and local mental health resources in the event of a violent incident;

(vii) procedures for an annual review and the conduct of drills and other exercises to test components of the emergency response plan, including the use of tabletop exercises, in coordination with local and county emergency responders and preparedness officials; and

(viii) policies and procedures for securing and restricting access to the crime scene in order to preserve evidence in cases of violent crimes on school property.

(3) Each board of education, chancellor or other governing body shall make each district-wide and building-level school safety plan available for public comment at least 30 days prior to its adoption, provided that only a summary of each building-level emergency response plan shall be made available for public comment. Such district-wide and building-level plans may

be adopted by the school board only after at least one public hearing that provides for the participation of school personnel, parents, students and any other interested parties. Each district shall file a copy of its district-wide comprehensive safety plan with the commissioner and all amendments to such plan shall be filed with the commissioner no later than 30 days after their adoption. A copy of each building-level safety plan and any amendments thereto, shall be filed with the appropriate local law enforcement agency and with the State Police within 30 days of its adoption. Building-level emergency response plans shall be confidential and shall not be subject to disclosure under article six of the Public Officers Law or any other provision of law.

(4) The commissioner may grant a waiver of the requirements of Education Law section 2801-a, this subdivision and subdivision (b) of this section to any school district or board of cooperative services or county vocational education and extension board for a period of up to two years from July 24, 2000 upon a finding by the commissioner that such district had adopted a comprehensive school safety plan on or before November 1, 2000 which is in substantial compliance with the requirements of Education Law section 2801-a.

(f) *Use of school property.* Each board of education and board of cooperative educational services shall cooperate with appropriate State, county and city agencies in developing agreements for the use of school-owned facilities and vehicles during a disaster. School districts and boards of cooperative educational services are required to relinquish to the appropriate State or county agencies the control and use of school transportation vehicles and facilities in accordance with county emergency preparedness plans or directives.

(g) *Communication liaisons.* (1) Except in a school district in a city having a population of more than one million inhabitants, each district superintendent, during a local or State emergency, shall act as the chief communication liaison for all educational agencies within the supervisory district territorial limits.

(2) The superintendent of schools in the Cities of Buffalo, Rochester, Syracuse and Yonkers, during a local or State emergency, shall act as the chief communication liaison for all educational agencies located within the city district.

(h) *Reporting.* Each superintendent shall notify the commissioner as soon as possible whenever the emergency plan or building-level school safety plan is activated and results in the closing of a school building in the district, and shall provide such information as the commissioner may require. School districts within a supervisory district shall provide such notification through the district superintendent, who shall be responsible for notifying the commissioner. Such information need not be provided for routine snow emergency days.

(i) *Instruction.* Each public school superintendent and each chief school administrator of an educational agency other than a public school shall take action to provide written information, by October 1st of each school year, to all students and staff about emergency procedures.

(j) *Drills.* Each school district and board of cooperative educational services shall, at least once every school year, and where possible in cooperation with local county emergency preparedness plan officials, conduct one test of its emergency plan or its emergency response procedures under each of its building-level school safety plans, including sheltering or early dismissal, at a time not to occur more than 15 minutes earlier than the normal dismissal time.

(1) Parents or persons in parental relation shall be notified at least one week prior to the drill.

(2) Such drills shall test the usefulness of the communications and transportation system during emergencies.

(3) The provisions of section 175.5(a) of this Title regarding the length of school day for State aid purposes shall not apply to school days in which less than the minimum number of hours is conducted because of an early dismissal pursuant to this subdivision.

(k) *Reports by educational agencies.* Except in a school district in a city having a population of more than one million inhabitants, the chief executive officer of each educational agency located within a public school district shall provide to the superintendent of schools information about school population, number of staff, transportation needs and the business and home telephone numbers of key officials of such educational agencies.

(l) Nothing contained in subdivision (a) or (c) of this section shall prevent an educational agency from using, in part or in total, an emergency management plan previously developed in cooperation with a county or other municipality as the emergency management plan required in this section until the adoption of school safety plans as required by subdivision (b) of this section; provided, however, that all applicable requirements of this section shall be met.

(m) *Commissioner of Education.* The Commissioner of Education or his or her designee may order emergency response actions by individual school districts in the event that the local officials are unable or unwilling to take action deemed to be appropriate by State and/or county emergency personnel in accordance with county or State emergency preparedness plans or directives.

**Historical Note**

Sec. filed Dec. 23, 1997; renum. 155.21, new added by renum. 155.13, filed Sept. 21, 1999; amds. filed: Nov. 14, 2000 as emergency measure; Feb. 9, 2001 as emergency measure; March 23, 2001 as emergency measure; April 27, 2001 eff. May 17, 2001.

## § 155.18 Aid for asbestos inspections.

(a) *Purpose.* Each school district, board of cooperative educational services (BOCES), and nonpublic school as defined in this section, may submit a claim for aid for approved expenses for asbestos inspections incurred on or after January 1, 1988 and prior to July 1, 1989, pursuant to the provisions of sections 15 and 16 of chapter 262 of the Laws of 1988.

(b) *Definitions.* For the purpose of this section:

(1) *Nonpublic school* shall mean a nonprofit, nonpublic elementary or secondary school which, by September 1, 1989, has submitted the claim form required pursuant to this section, and which establishes to the satisfaction of the commissioner that it provides instruction to pupils in accordance with Education Law, section 3204.

(2) *Approved expenditures for asbestos inspections* shall mean cash expenditures approved by the commissioner for asbestos inspections and expenses related to such expenses as defined in subdivision 1 of each of sections 15 and 16 of chapter 262 of the Laws of 1988.

(3) *Instructional space* shall mean space in which teachers or other professional staff meet with students for purposes of providing instruction or professional services, including service-related spaces such as, but not limited to boiler rooms, hallways, means of egress, toilets, cafeterias, as approved by the commissioner; provided that such term shall not include vacant facilities, dormitories, dwellings, public libraries and other facilities for which the primary use is administrative, storage, maintenance, bus and motor vehicle storage and/or maintenance or repair.

(c) *Approval of expenditures for asbestos inspections.* Costs eligible for approval shall include the costs of the asbestos inspection activities described in paragraph b of subdivision 1 of each of sections 15 and 16 of chapter 262 of the Laws of 1988, provided that such activities have been completed by individuals and/or entities approved to perform such activities or services through programs approved by the Federal Environmental Protection Agency, and in the case of laboratories, also approved by the New York State Department of Health, and further provided that:

(1) such inspection activities are conducted in facilities which are owned by a school district or board of cooperative educational services; or

(2) when conducted in facilities leased by a school district or board of cooperative educational services, such inspection activities are conducted in those portions of such facilities which are used for BOCES or school district purposes as instructional space; or

(3) when conducted in facilities owned or leased by a nonpublic school, such inspection activities are conducted in those portions of such facilities which are used as instructional space.

(d) Each school district, BOCES and nonpublic school which seeks an apportionment pursuant to section 15 or 16 of chapter 262 of the Laws of 1988 shall submit a claim in a form prescribed by the commissioner no later than September 1, 1989. The commissioner shall pay aid pursuant to this section after timely receipt of properly executed claim forms, provided that no aid shall be payable prior to October 1, 1989.

**Historical Note**

Sec. added by renum. 155.14, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.19 Extraordinary school capital needs program.

(a) Allowable expenses for repairs that may be used to calculate the apportionment of extraordinary school capital needs aid pursuant to sections 1 and 2 of chapter 64 of the Laws of 1994 shall mean expenditures recorded in the school district's special aid fund related to maintaining and repairing instructional school facilities, including expenses for minor repair and improvement activities performed to remedy existing minor maintenance deficiencies and expenses for periodic, scheduled maintenance activities intended to mitigate the need for extensive capital renovation and rehabilitation in the future. Such expenses may include heating, ventilation and air conditioning repairs, electrical system repairs, plumbing repairs, and general repairs, including, but not limited to roof, floor, wall and window repairs, including painting and patching. Allowable expenses shall not include any expenses eligible for building aid under provisions of subdivision 6 of section 3602 of the Education Law.

(b) *Application for the apportionment.* (1) The city school district of New York shall submit an application for the apportionment provided pursuant to section 1 of chapter 64 of the Laws of 1994, which shall consist of the report required by subdivision (c) of such section.

(2) For school districts claiming an apportionment for the extraordinary school capital needs program pursuant to section 2 of chapter 64 of the Laws of 1994, any reports submitted to the commissioner pursuant to subdivision (d) of this section shall be deemed to be an application for the apportionment.

(c) *Reports of expenditures on maintenance and repair projects required of the city school district of New York.* (1) On or before March 1, 1995, the city school district of New York shall submit to the commissioner a certified report of expenditures made through February 1, 1995, from the special aid fund of the city school district for programs funded from the extraordinary school capital needs program for New York City pursuant to section 1 of chapter 64 of the Laws of 1994. Such report shall indicate by community school district, high school district and group of special education buildings the amount of expenditures for those minor maintenance and repair projects identified for funding pursuant to subdivisions (c) and (d) of section 1 of chapter 64 of the Laws of 1994.

(2) On or before August 1, 1995, the city school district of New York shall submit to the commissioner a certified report of expenditures made through June 30, 1995, from the special aid fund of the city school district for programs funded from the extraordinary school capital needs program for New York City pursuant to section 1 of chapter 64 of the Laws of 1994. Such report shall indicate by community school district, high school district and group of special education buildings the amount of expenditures for those minor maintenance and repair projects identified for funding pursuant to subdivisions (c) and (d) of section 1 of chapter 64 of the Laws of 1994.

(3) On or before December 1, 1994, the city school district of New York shall submit to the commissioner a separate certified report for each of the 1993-94 and 1994-95 school years of all expenditures recorded to the general fund of the city school district related to maintaining and repairing instructional school facilities, including expenses for minor repairs and improvement activities performed to remedy existing minor maintenance deficiencies and expenses for periodic, scheduled maintenance activities intended to mitigate the need for extensive capital renovation and rehabilitation in the future. Based on these reports the commissioner shall identify any positive difference of such 1993-94 expenditures minus such 1994-95 expenditures, and the apportionment payable to the city school district of New York under section 1 of chapter 64 of the Laws of 1994 or under section 3602 of the Education Law and section 3609-a of the Education Law shall be reduced in any amount equal to the amount of such identified positive difference.

(d) *Reports of expenditures on maintenance and repair projects required of school districts outside of New York City.* (1) On or before March 1, 1995, any school district claiming an apportionment for the extraordinary school capital needs program pursuant to section 2 of chapter 64 of the Laws of 1994 shall submit a certified report to the commissioner of the total expenditures incurred through February 1, 1995, in support of the activities of such program.

(2) On or before August 1, 1995, any school district claiming an apportionment for the extraordinary school capital needs program pursuant to section 2 of chapter 64 of the Laws of 1994 shall submit a certified report to the commissioner of the total expenditures incurred through June 30, 1995 in support of the activities of such program.

(3) On or before December 1, 1995, any school district receiving an apportionment for the extraordinary school capital needs program pursuant to section 2 of chapter 64 of the Laws of 1994 shall report to the commissioner any positive difference of the initial 1994-95 budgetary appropriation from appropriation account A1621 of the uniform system of accounts for school districts, as approved by the school district prior to July 1, 1994, minus the actual expenditures recorded to such accounts for the fiscal period ending June 30, 1995. Such report shall demonstrate to the satisfaction of the commissioner that any such positive difference does not represent the supplanting of local funds with funding provided pursuant to section 2 of chapter 64 of the Laws of 1994, or the school district shall have its apportionment under sections 3602 and 3609-a of the Education Law reduced in an amount equal to the amount of such positive difference that the commissioner determines represents supplanted funds.

**Historical Note**

Sec. added by renum. 155.15, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.20 Energy performance contracts.

(a) The following procedures consistent with Energy Law, section 9-103(8), and Education Law, sections 305(27) and 3602(6)(i)(5)(i)(b) and (c) shall apply to energy performance contracts entered into by a school district or a board of cooperative educational services (BOCES) on or after July 1, 1998, provided that this section shall not apply to energy performance contracts for which a request for proposals was entered into prior to July 1, 1998.

(b) *Definitions.* For the purposes of this section:

(1) *Energy performance contract* shall mean an agreement for the provision of energy services, including but not limited to electricity, heating, ventilation, cooling, steam or hot water, in which a person agrees to install, maintain or manage energy systems or equipment to improve the energy efficiency of, or produce energy in connection with, a building or facility in exchange for a portion of the energy savings or revenues.

(2) *Simple payback period* shall mean a measure of the length of time required for the cumulative cost savings, net of cumulative future costs, from an investment in an energy conservation project to pay back the investment cost, without taking into account the time value of money, or the differential energy price escalation rate, or the State building aid payable for the project.

(3) *Energy savings* shall mean the positive difference between the energy and associated cost before the retrofit and its estimated cost after the retrofit of a proposed alternative building system, taking into account all types of energy effected.

(4) *Cost savings* shall mean the positive difference between the operation and maintenance cost before the retrofit and its established operation and maintenance cost after the retrofit.

(5) *Co-generation* shall mean the simultaneous production of electricity and thermal energy. Typical systems utilize natural gas engines to turn electric generators thereby producing electricity, which reduces utility costs. Waste heat captured from the natural gas combustion process can be used to produce domestic hot water, provide space heat in winter or air conditioning in summer when used in conjunction with absorption chillers.

(c) The appropriate type of projects that qualify to be completed under an energy performance contract may include, but are not limited to:

(1) replacement of lighting fixtures;

(2) installation of energy efficient boiler/furnace, heating, ventilating, air conditioning (HVAC) equipment;

(3) installation of vestibules;

(4) installation of automatic setback thermostat;

(5) energy management system;

(6) upgrade domestic hot water system;

(7) roof insulation;

(8) installation of energy efficient window/doors;

(9) co-generation; or

(10) the installation, maintenance or management of other energy systems or equipment to improve the energy efficiency of, or produce energy in connection with, a building or facility.

(d) Every energy performance contract entered into by a school district or BOCES to which this section applies and every amendment to an energy performance contract entered into on or after July 1, 1998 by a board of education or a BOCES shall be subject to approval by the Commissioner of Education and shall contain a provision that such contract shall not be executory until approval of the commissioner is obtained. In order to obtain approval by the Commissioner of Education to enter into an energy performance contract, the school district or BOCES shall:

(1) demonstrate that the project complies with all applicable provisions of section 155.2 of this Part;

(2) describe the scope and nature of the work to be performed;

(3) demonstrate that the types of projects included in the energy performance contract are appropriate in accordance with subdivision (c) of this section;

(4) provide a detailed breakdown of the energy performance savings to be derived each year and for the duration of the energy performance contract in the project summary form, which shall include:

(i) a description of each energy conservation measure included in the energy performance contract;

(ii) the cost of each energy conservation measure;

(iii) the project energy savings and cost savings;

(iv) the useful life of each energy conservation measure; and

(v) the simple payback period;

(5) state any maintenance and monitoring charges that are part of the energy performance contract in a clear and conspicuous manner separately in the contract;

(6) provide the interest rate applicable to the energy performance contract and length of borrowing. The interest rate will be compared to the U.S. Treasury rate for like terms as published in the Wall Street Journal and must be comparable;

(7) provide the following certifications:

(i) the sole trustee, the president of the board of trustees or board of education, or the president of the BOCES shall certify that in lieu of competitive bidding, the energy performance contract was procured pursuant to a request for proposal (RFP) process in accordance with the school district's or BOCES' procurement policies and procedures adopted pursuant to applicable provisions of General Municipal Law, section 104-b;

(ii) the energy performance contractor shall certify that such energy performance contractor has guaranteed recovery of contract costs from energy savings realized by the school district during the term of the energy performance contract, which shall not exceed 18 years, or the useful life of the equipment being installed, whichever is less. This certification shall be based on an analysis of energy costs and savings, which shall not include any cost savings attributable to State building aid. If a simple payback calculation is used to demonstrate compliance with the 18 year payback limitation, it shall be calculated by dividing the initial contract cost by the first year cost savings. If another analysis is used to support the certification, it should be submitted with the certification;

(iii) the energy performance contractor shall certify that measurement and verification techniques for determining cost savings will be performed in accordance with the North American Energy Measurement and Verification Protocol, March 1996 (U.S. Department of Energy, Washington, DC 20585: available at the Office of Facilities Planning, Room 1060, State Education Building Annex, Albany, NY 12234);

(iv) the energy performance contractor shall certify that any State building aid attributable to such project has been excluded in determining the cost savings and payback period under the energy performance contract; and

(v) the architect and/or engineer of record shall certify that he or she is free from financial interest in the energy performance contractor which conflicts with the proper completion of the audit and any design work associated with the energy performance contract and that full disclosure has been made to the school district and/or BOCES detailing all financial compensation received from the energy performance contractor.

(e) The administrative and technical review by the State Education Department shall include:

(1) review of project scope and its appropriateness to be done under an energy performance contract and its eligibility for building aid;

(2) review of the project's compliance with applicable provisions of section 155.2 of this Part;

(3) review of detailed breakdown of the energy savings to ensure compliance with Education Law, section 3602(6)(i)(5)(i);

(4) review of certifications by the president of the board of education, energy performance contractor and architect/engineer as specified in regulations;

(5) review of interest rate and comparison to the U.S. Treasury rate for like terms; and

(6) review of technical specifications for compliance with the Uniform Fire Prevention and Building Code, State Education Department standards and other applicable standards.

(f) Capital construction costs and associated incidental costs such as architect/engineer fees, administrative costs and feasibility costs may be eligible for building aid. Costs associated with operation and maintenance, repairs, extended warranties and service agreements are not eligible for building aid and should be separated in a clear and conspicuous manner from those eligible expenses.

**Historical Note**

Sec. added by renum. 155.16, filed Sept. 21, 1999 eff. Oct. 7, 1999.

### § 155.21 Mobile instructional unit contracts awarded through a request for proposals.

(a) Pursuant to the provisions of section 305(14)(a) of the Education Law, all contracts for mobile instructional units which are subject to the competitive bidding requirements of General Municipal Law shall be awarded to the lowest responsible bidder or through an evaluation of proposals submitted in response to a request for proposals by a board of education.

(b) When a board of education elects to award a contract through an evaluation of proposals in response to a request for proposals, such board of education shall evaluate each proposal from a responding contractor in accordance with the following criteria:

(1) the previous experience of the contractor in providing mobile instructional units for use by public school districts;

(2) the name of each transportation company or manufacturer in which the contractor or any of the contractor's officers has been an owner or a manager or has had a controlling interest;

(3) a description of any vehicle safety standards included in the design standards for the mobile instructional units under the control of the contractor that exceed applicable standards defined in statute or regulations;

(4) inspection records and model year of the mobile instructional units under the control of the contractor;

(5) maintenance schedules of the mobile instructional units under the control of the contractor;

(6) a financial analysis of the contractor;

(7) documentation of compliance with insurance requirements;

(8) documentation of compliance with this Part and applicable provisions of the State Uniform Fire Prevention and Building Code (19 NYCRR Part 444); and

(9) total cost of the proposal.

(c) Any public notice soliciting proposals for mobile instructional units, as well as any instructions provided to potential respondents to a request for proposals pursuant to this section, shall specify all of the criteria to be used in evaluating such proposals and shall specify the weightings that the board of education has assigned to each criterion for the purpose of evaluating proposals submitted in response to the request for proposals. For this purpose no single criterion shall be weighted in excess of 50 percent of the total weight of all of the criteria to be used.

(d) Each district awarding a contract through an evaluation of proposals shall submit such contract to the commissioner for approval pursuant to the provisions of Education Law, section 305(14), together with satisfactory evidence of the date of the request for such proposals, the forms and instructions used in making such request, the contract specifications, all proposals received, the criteria used in evaluating the proposals, the weights assigned to each criterion, the scores used to assess each category of the criteria, and such other information as the commissioner deems necessary for such approval.

(e) Proposals for contracts for mobile instructional units for the following school year shall be requested no later than June 1st.

**Historical Note**

Sec. added by renum. 155.17, filed Sept. 21, 1999 eff. Oct. 7, 1999.

## § 155.22 Qualified zone academy bonds.

(a) *Purpose.* The purpose of this section is to establish procedures, consistent with State and Federal law, for the allocation and issuance of qualified zone academy bonds as authorized by 26 USC section 1397E (United States Code, 1994 edition, supplement III, volume 3; Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9328; 1998 - available at the Office of Facilities Planning, Education Building Annex, Room 1060, State Education Department, Albany, New York 12234).

(b) *Definitions.* As used in this section:

(1) *Qualified zone academy bond* (or *QZAB*) means a bond, as defined in 26 USC section 1397E(d)(4), the proceeds of which can be used for rehabilitating or repairing the public school facility in which a qualified zone academy is established, providing equipment for use at such academy, developing course materials for education to be provided at such academy and/or training teachers and other school personnel in such academy.

(2) *Qualified zone academy* means a public school, or academic program within a public school, which is established by and operated under the supervision of an eligible school district and which meets the requirements of 26 USC section 1397E(d)(4).

(3) *Qualified contribution* means a contribution as defined in 26 USC section 1397E(d)(2)(B), made by private entity to a qualified zone academy.

(4) *Eligible school district* means an eligible local education agency, as defined in 26 USC section 1397E(d)(4)(B), which meets the requirements of subdivision (d) of this section.

(5) *Project* or *capital construction project* means a project:

(i) for a qualified purpose, as defined in 26 USC section 1397E(d)(5);

(ii) that is financed through qualified zone academy bonds issued pursuant to 26 USC section 1397E; and

(iii) that has voter authorization or board authorization, as required.

(6) *State limitation amount allocation* means the amount of the qualified zone academy bond limitation allocated to the State pursuant to 26 USC section 1397E(e)(2).

(c) *State responsibilities.* (1) Allocation. The commissioner shall determine annually the respective amounts of the State limitation amount allocation to be allocated to approved qualified zone academies within eligible school districts.

(i) Fifty percent of the State limitation amount allocation shall be allocated to approved qualified zone academies located within the City School District of the City of New York in accordance with the procedures set forth in subparagraph (iii) of this paragraph.

(ii) The remaining fifty percent of the State limitation amount allocation shall be allocated to approved qualified zone academies located within the remaining school districts in the State in accordance with the procedures set forth in subparagraph (iii) of this paragraph.

(iii) Procedures for allocation of State limitation amount.

(*a*) All applications received from eligible school districts by the date prescribed pursuant to subdivision (d) of this section shall be ranked in order of highest to lowest percentage of students attending the respective qualified zone academy schools or participating in the respective qualified zone academy programs, who are eligible for free or reduced-cost lunches under the school lunch program established under the National School Lunch Act.

(*b*) Subject to the provisions of subparagraphs (i) and (ii) of this paragraph, the available State limitation amount allocation shall be allocated to approved qualified zone academies in the order of rank, from highest to lowest, as established in clause (*a*) of this subparagraph, in an amount equal to the amount to be financed by the QZABs to be issued for each respective project, until such allocation is exhausted.

(*c*) Eligible school districts that timely apply for but do not receive an allocation for qualified zone academies within their districts because the number of applicants exceeds the amount available from the State limitation amount allocation shall receive priority, in the order in which they are ranked, pursuant to clause (*a*) of this subparagraph, with respect to the next available allocation.

(2) Capital construction projects involving the repair, renovation or alteration of public school facilities that are approved by the commissioner, and established as qualified zone academies pursuant to the provisions of subdivision (d) of this section, shall be eligible to receive building aid pursuant to the provisions of Education Law section 3602(6).

(3) The commissioner shall establish annually the database to be used to determine whether a school district qualifies pursuant to 26 USC section 1397E(d)(4)(A)(iv)(II) as meeting the student eligibility rate in school lunch programs established under the National School Lunch Act.

(d) *School district responsibilities.* (1) Eligible school districts, in which a qualified zone academy or academies are located, may apply, in a form prescribed and by a date established by the commissioner, for approval to receive an allocation for such qualified zone academy or academies from the State limitation amount allocation. Such application shall include, but is not limited to:

(i) a certification by the school district within which the qualified zone academy or academies are located that the school(s) or academic program(s) meet the requirements for a qualified zone academy pursuant to 26 USC section 1397E(d)(4);

(ii) a certification by the school district that the bonds to be issued meet the requirements for a qualified zone academy bond pursuant to 26 USC section 1397E(d)(1);

(iii) a description of the capital construction project(s) to be financed through the issuance of qualified zone academy bonds;

(iv) copies of written commitments from private entities to make qualified contributions, as described in 26 USC section 1397E(d)(2)(B), having a present value, as of the date of the issuance of the bond issue, of not less than 10 percent of the proceeds of the issue; and

(v) the written approval of the superintendent of schools and the Board of Education for such bond issuance.

(2) Any capital construction project to be financed through the issuance of qualified zone academy bonds shall be submitted for review to the Office of Facilities Planning in the State Education Department.

(3) Nothing in this regulation shall prevent the use of qualified zone academy bonds for projects that are not capital construction projects, provided that such projects meet all the other requirements of this section, including voter or board authorization, as may be required.

**Historical Note**

Sec. filed Sept. 19, 2000 eff. Oct. 5, 2000.

## § 155.23 Multi-year cost allowance.

(a) The following methodology establishes a multi-year cost allowance which shall apply to school districts and boards of cooperative educational services for the purpose of computation of building aid:

(1) Every school district and board of cooperative educational services shall submit a building condition survey report as required by section 155.4 of this Part.

(2) Cost allowances for reconstructing or modernizing structures shall not exceed 100 percent of the cost allowances for the equivalent new construction over the projected useful life of the building. Building aid cost allowances shall not exceed the maximum cost allowance for the projected useful life of a new building, addition or reconstruction and alterations, using a

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declining balance method. Once the maximum cost allowance has been exhausted, no further building aid shall be calculated until the projected useful life span has been exhausted.

(3) The architect or engineer of record shall certify to the commissioner the probable useful life of any capital construction work submitted to the commissioner.

(4) The architect or engineer of record shall provide documentation to the commissioner regarding the proper operation and maintenance for each system.

(5) The probable useful life of any building system shall be the period described in section 11.00 of the Local Finance Law. In the absence of any reference to section 11.00 of the Local Finance Law regarding periods of probable useful life, the following shall apply: 30 years for new buildings; 20 years for additions; 15 years for reconstruction projects.

(6) The commissioner may reduce the probable useful life expectancy for purposes of the calculation of building aid upon a finding that replacement or renovation of the existing building is necessary to protect the health and safety of students or staff, and that the need to replace or renovate the building was not caused by a failure to properly operate and maintain the building.

(b) *Appeals to the commissioner.* A school district or a board of cooperative educational services may appeal a determination of the commissioner that a building has not been adequately maintained. To appeal, a school district or a board of cooperative educational services shall submit documentation describing: how the building was maintained; why the building and/or any of its major building systems, as defined in Education Law section 3602(6)(4), did not last as long as anticipated; what steps, if any, are being taken to remedy the failure of the building and/or any of its major building systems to last for the entire period of probable usefulness; and any other relevant information requested by the commissioner. In addition, the district or board of cooperative educational services shall submit information regarding any claims for recoveries, including insurance guarantee and warranty claims, and the status of any such claims.

**Historical Note**

Sec. filed June 15, 2001 eff. July 4, 2001.

## § 155.24 School pesticide neighbor notification.

(a) *Definitions.* For purposes of this section, the following terms shall have the meanings set forth below.

(1) *Facility* means any school building used for instructional purposes and its surrounding grounds; sites and other grounds used for playgrounds, athletics and other instructional purposes; transportation facilities; and any administrative offices.

(2) *Pesticide* shall have the same meaning as in section 33-0101(35) of the Environmental Conservation Law.

(3) *Relevant facility* shall mean any facility where the staff person receiving notification regularly works, or where a child of the person in parental relation receiving notification regularly receives instruction.

(4) *School* shall mean any public school district, private or parochial school, or board of cooperative educational services.

(5) *School pesticide representative* shall mean an employee of a public school district, private or parochial school, or board of cooperative educational services (BOCES), who is designated to act as a person to provide written notification, and from whom further information may be obtained, concerning pesticide applications at such school district, private or parochial school, or BOCES.

(6) *School year* shall mean the period commencing on the first day of regular instruction and ending on the last day of session.

(7) *Spring recess* shall mean the vacation period following winter recess and prior to the end of the school year.

(8) *Summer school* shall mean the period commencing on the first day of summer school instruction and ending on the last day of the session.

(9) *Winter recess* shall mean the vacation period on or about January 1st.

(10) *Written notification* shall mean notice in writing that is: provided directly to the student or staff; or delivered to a receptacle designated for that student or staff; or mailed to the student's or staff's last known home address; or delivered by any other reasonable methods authorized by the commissioner, including, but not limited to, delivery by means of a school newsletter.

(b) *Notification procedures*. Schools shall establish written pesticide notification procedures to provide information on pesticide applications at relevant facilities according to the following provisions.

(1) The school shall provide written notification to all staff and persons in parental relation at the beginning of each school year or summer school session. If a child enrolls after the beginning of the school year or summer school session, written notification shall be provided to the person in parental relation within one week of such enrollment. Such written notification shall include at a minimum the following information:

(i) a statement that pesticide products may be used periodically throughout the school year or summer school session;

(ii) a statement that schools are required to maintain a list of staff and persons in parental relation who wish to receive 48-hour prior written notification of pesticide applications at relevant facilities, and instructions on how to register with the school to be on such list for prior notification; and

(iii) the name and phone number of a school pesticide representative who may be contacted to obtain further information.

(2) Within 10 days of the end of the school year, and within two school days of the end of winter recess and spring recess, and within two days of the end of summer school, the school shall provide written notification to all staff and persons in parental relation listing the date, location and product used, for each application which required prior notification and each emergency application made, at relevant facilities, during the period of time since the previous notice. Each notification shall also include a statement that schools are required to maintain a list of staff and persons in parental relation who wish to receive 48-hour prior written notification of pesticide applications and instructions on how to register with the school to be on such a list for prior notification; how to obtain further information about the products being applied, including any warnings that appear on the label of the pesticides that are pertinent to the protection of humans, animals or the environment; and the name and phone number of a school pesticide representative who may be contacted for additional information.

(3) Each school shall establish and maintain a list of staff and persons in parental relation who have requested written notification 48 hours in advance of pesticide applications at relevant facilities. Schools shall add any staff or person in parental relation to such list upon request.

(4) Except as provided in Education Law section 409-h(2)(e), not less than 48 hours prior to the application of a pesticide at a facility, the school pesticide representative shall provide to those on the list relevant to such facility, written notification which shall include, at a minimum, the following information:

(i) the specific date and location of the application at the relevant facility. In case of outdoor applications, the notice may also include two alternative dates in case the application cannot be made due to weather conditions;

(ii) the product name and the United States Environmental Protection Agency pesticide registration number;

(iii) the following statements: "This notice is to inform you of a pending pesticide application to a school facility. You may wish to discuss with the designated school representative what precautions are being taken to protect your child from exposure to these pesticides. Further information about the product(s) being applied, including any warnings that appear on the label of the pesticide(s) that are pertinent to the protection of humans, animals or the environment, can be obtained by calling the National Pesticide Telecommunications Network information phone number 1-800-858-7378 or the New York State Department of Health Center for Environmental Health Info line at 1-800-458-1158" ;

(iv) the name and phone number of a school pesticide representative who may be contacted for additional information; and

(v) a copy of the 48-hour notification shall also be posted in a public location within the relevant facility.

(c) *Enforcement.* (1) Complaint. Persons in parental relation, staff and other individuals may notify the Commissioner of Education or his/her designee of a school's alleged failure to comply with the requirements of Education Law section 409-h and this section by submitting a written complaint, in a format prescribed by the commissioner, to the State Education Department, Office of Facilities Planning. Such complaint shall include:

(i) the name, address and telephone number of the complainant;

(ii) the name of the school district, board of cooperative educational services or nonpublic school against which the complaint is made;

(iii) the name and address of the specific facility that is the subject of the complaint; and

(iv) a detailed description of the complaint, including the nature of the school's alleged failure to comply and a statement of the facts in support of such alleged failure to comply.

(2) Investigation. Upon receipt of a written complaint alleging a school's failure to comply with the requirements of this section, the Commissioner of Education or his/her designee shall conduct an investigation to ascertain the school's compliance with this section.

(3) Withholding. (i) Whenever it shall have been demonstrated to the satisfaction of the commissioner that a public school district has failed to adopt a procedure for notification, or to faithfully and completely implement this section, the commissioner may, on 30 days' notice to the district, withhold from the district monies to be paid to such district for the current school year pursuant to Education Law section 3609-a, exclusive of monies to be paid in respect of obligations to the retirement systems for the school and district staff and pursuant to collective bargaining agreements.

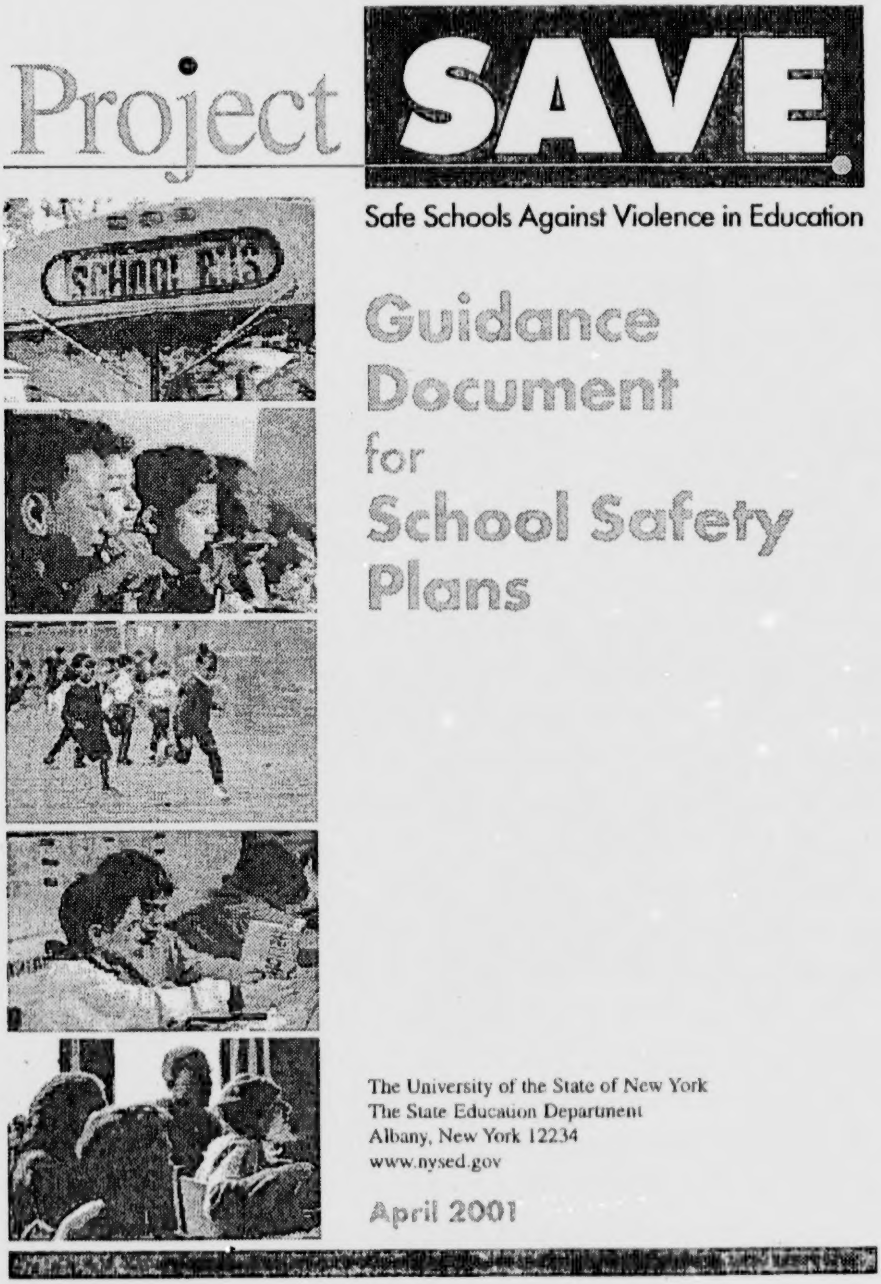
(ii) Where it has been demonstrated to the satisfaction of the commissioner that a private or parochial school has failed to adopt a procedure for notification, or to faithfully and completely implement this section, the commissioner may, on 30 days' notice to such school, withhold from the school State aid monies to be paid to such school for the current school year pursuant to chapter 507 of the Laws of 1974, as amended by chapter 903 of the Laws of 1984.

(iii) Prior to such withholding, the commissioner shall provide the school an opportunity to present evidence of extenuating circumstances. When combined with evidence that the school shall promptly comply within a short time frame that shall be established by the commissioner as part of an agreement between the school and the commissioner, the commissioner may temporarily stay the withholding of such funds pending implementation of such an agreement. If it is subsequently determined by the commissioner that the school is in full compliance with this section, the commissioner shall abate the withholding in its entirety.

**Historical Note**

Sec. filed June 21, 2001 as emergency measure, expired 90 days after filing; Oct. 9, 2001 as emergency measure eff. Oct. 9, 2001; Oct. 9, 2001 eff. Oct. 25, 2001.

# Project SAVE Guidance Document for School Safety Plans



Project SAVE

Safe Schools Against Violence in Education

Guidance Document for School Safety Plans

The University of the State of New York
The State Education Department
Albany, New York 12234
www.nysed.gov

April 2001

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# Introduction

Creating and maintaining safe learning environments is everybody's business. While schools remain among the safest places for our students, one incident of violence or disruption of learning is one too many. Teachers, school administrators and members of the general school community are becoming increasingly concerned about school safety and the potential for violence that exists in every community. Elementary, middle, junior high schools, and high schools in urban, suburban and rural communities throughout the State are seeking ways to ensure the safety of students in school. While media attention has focused on the most traumatic incidents of school violence, the impact of other violent acts that impair education also need to be given attention. These acts include bullying, threats or intimidation, disruptive behavior in class, carrying of weapons, fighting, physical assaults and other behaviors that impede learning.

The New York State Education Department is committed to promoting safe and healthy learning environments where students are secure in their pursuit of educational success. A growing body of research indicates that positive, skills-based approaches focusing on strengths may increase the safety of students and teachers in schools and promote an improved instructional climate for learning. While schools can play a vital role in the prevention of violence through preparedness, education and training, they need help from the entire community in this effort.

Today, our schools and the students served by them face great challenges. In the past decade, we have seen horrific acts of violence against individuals and groups of individuals for unfathomable reasons. Each time one of these events occurs, parents in cities and towns across America wonder: "Could this happen here, in my child's school, to my child?" Recent events in our own state in Elmira indicate that no school should assume that "It can't happen here."

To address issues of school safety and violence prevention, the Safe Schools Against Violence in Education Act (SAVE) was passed by the New York State Legislature and signed into law by Governor George E. Pataki on July 24, 2000. Project SAVE culminates the work of the Task Force on School Violence chaired by Lieutenant Governor Mary O. Donohue. The Task Force consisted of a broad range of qualified people from all parts of the State including students, parents, teachers, school administrators, law enforcement experts, business leaders, mental health professionals and local elected officials. From its inception in January 1999, the Task Force sought information concerning the best school violence prevention and intervention practices in the State and the nation. Ten public hearings were held throughout the State, providing a rich array of recommendations from local communities about ways to ensure the safety of New York's students. The Task Force's final report, Safer Schools for the 21st Century (October, 1999), contained a series of recommendations intended to reduce incidents of violence in schools and strengthen schools' capacities for responding to emergencies that could affect the health and safety of children.

The New York State Board of Regents approved amendments to the Regulations of the Commissioner of Education as emergency measures in November 2000 to ensure compliance with the new legislation. The revised regulations in Section 155.17 of the Commissioner's Regulations contain the requirements for schools concerning school safety plans. A major component of SAVE is the develop-

*Continued*

ment of school safety plans at the district and at the building levels. The new District-wide School Safety Plan replaces the current school emergency management plan that is required for all districts. At the building level, a newly required Building-level Emergency Response Plan must be prepared for each school building in the State. Together, these plans are intended to define how each school district and all the buildings in the district will respond to acts of violence and other disasters through prevention, intervention, emergency response, and management.

Both the District-wide School Safety Plan and the Building-level Emergency Response Plan should be viewed as part of a comprehensive, collaborative approach required by Project SAVE. While schools are on the front lines in the effort to prevent school violence and promote school safety, schools cannot do it alone. The New York State Education Department strongly endorses and encourages broad community participation beyond the requirements in law and regulations, to improve the safety of the school environment. The Task Force states in its report that "The best solutions to improving school safety will be found at the local level. When efforts are made to include a broad representation of the community, the possibilities for success are enhanced exponentially." (1999, p. 10)

## Recognizing School Safety Issues

While violence isn't the only safety issue schools face, the past decade has witnessed numerous acts of tragic violence in schools in all parts of the nation. Since 1992, at least twenty-three schools throughout the country have experienced multiple victim homicides. In the last three years alone, nine acts of violence on school grounds have resulted in the deaths of twenty-five students and four teachers, and the wounding of another seventy-two students and three school employees. (Safer Schools for the 21st Century, 1999) These senseless acts of violence have occurred in urban, suburban and rural communities where people previously believed that such an incident could not happen in their schools. Fortunately, no school in New York State has been the site of the types of horrific violence that have occurred in other schools in the nation.

New York State schools, however, are not free of the types of violent student behavior and student victimization that seriously impede the educational progress of students. The 1999 Youth Risk Behavior Survey (YRBS), conducted by the Centers for Disease Control and Prevention, was administered to a representative sample of students in the State's high schools. The survey results document the continued presence of safety concerns on the part of many students.

- Approximately 35% of all students and 44% of all male students reported that they were in a fight one or more times in the past year with almost half (15%) of the students reporting that the fights occurred on school property.
- Nearly 18% of all students and 27% of all male students reported that they carried a weapon, such as a gun, knife or club, one or more times in the past 30 days, including 8% of students reporting that they carried the weapon on school property.
- Over 9% of all students were threatened or injured with a weapon on school property over the past 12 months.
- About 8% of all students reported that they did not go to school one or more times over the past 30 days because they felt unsafe at school or on their way to and from school.
- School bomb threats continue to disrupt the education of students. Over 500 threats were reported during the 1999-2000 school year, including threats related to bombs, arson and anthrax.

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The Task Force concludes that while nationwide, the percentage of students reporting injuries and threats of injury have declined noticeably during the nineties, the current level of violence in our schools still remains unacceptable. It interferes with the rights of all children to a sound education. Students who want to learn should have every opportunity to pursue their educational goals free from violence and disruption.

## Promoting Student Academic Achievement

Recognizing that all children will need knowledge and skills to be successful in a rapidly changing and complex society, New York State has initiated a comprehensive education reform strategy to ensure high achievement for all students. Key steps to strengthen teaching and learning include new higher learning standards across seven education content areas; new statewide exams and student assessments to ensure that students attain the knowledge and skills they need for success; and new teacher training and certification requirements that address the need for a competent and highly-qualified teaching force.

A growing body of research and evaluative studies is developing the critical link between achievement and safe, healthy, orderly and supportive school environments where learning can take place. Students need a safe and secure environment that is free of drugs and crime in order to learn. The State's Task Force on School Violence repeatedly heard from individuals throughout the State that all facets of the community must engage in meaningful dialogue to use all available resources to ensure safe schools for students. In particular, the influences that lead to violence must be addressed in a very direct way by school leaders and staff, students and parents, and community agencies and leaders. Students must be involved as partners because we cannot eliminate school violence without them.

## Planning for Success

The increasing focus on violence prevention and the creation of safe schools where children can learn has generated strong support and concerted actions on the part of caring individuals in communities throughout the State and the nation. Many schools have realized the wealth of resources available in their community, and the time and effort that people will offer for the benefit of children. Model school safety strategies and exemplary planning processes and procedures have emerged in schools in New York and throughout the nation. The level of information and resources available for assisting schools and communities in school safety planning has risen dramatically over the past several years, and is readily accessible for use.

Project SAVE draws upon the considerable expertise and insight of knowledgeable individuals in formulating strategies for addressing school safety. The comprehensive approach to school safety and violence prevention, and the focus on broad-based community participation and involvement in school safety planning, incorporate best practices and program models that have proven effective for many schools. The creation and organization of school safety teams at the district and school building levels provides a proven model for drawing upon both school and community resources for enhancing the safety of students in school.

# Information about School Safety Plans

The SAVE law and implementing regulations require the development of a school safety plan at the district level, and individual emergency response plans for each building in the district. The Task Force report recognizes that "In the quest to take a pro-active approach regarding school safety issues, the local school district must find a way to personalize that approach to fit its own individual needs." (1999, p. 24) The development of the school safety plans can be the framework for the district in managing its initiatives in creating a safe and orderly school environment in which learning can take place. Planning teams should begin their work with a thorough review of the law and regulations. To assist districts and school buildings with the process for school safety planning and the formation of school safety teams, the following information provides important details concerning the SAVE planning requirements.

## Who Must Adopt School Safety Plans?

Every Board of Education, every Board of Cooperative Educational Services (BOCES) and County Vocational Education and Extension Board and the Chancellor of the New York City School District must adopt:

- A District-wide School Safety Plan, and
- A Building-level Emergency Response Plan for each building in the district.

## When Do Plans Have to Be Developed?

Plans need to be developed and adopted by the Board of Education or the Chancellor in New York City by July 1, 2001, and reviewed and updated annually by July 1 of each succeeding year.

## Who Develops the Plans?

The District-wide School Safety Plan is to be developed by a District-wide School Safety Team, and the Building-level plan is to be developed by a Building-level School Safety Team.

## Who Are On the Planning Teams?

Legislation specifies the composition of school safety planning teams. While there are requirements of who must be on the planning teams, districts are encouraged to consider the inclusion of individuals beyond the minimum required who can contribute to ensuring continuity between the district and the building-level plans.

- **The District-wide School Safety Team** is appointed by the Board of Education or the Chancellor in New York City and shall include, but is not limited to, representatives of the School Board, student, teacher, administrator, and parent organizations, school safety personnel and other school personnel.
- **The Building-level School Safety Team** is appointed by the building principal and shall include, but is not limited to, representatives of teacher, administrator and parent organizations, school safety per-

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sonnel, other school personnel, community members, local law enforcement officials, local ambulance or other emergency response agencies, and any other representatives the School Board, Chancellor or other governing body deems appropriate.

## Are there any differences in requirements for cities with over 1,000,000 inhabitants?

Amendments have been made to Commissioner's Regulations, Section 155.17 governing School Safety Plans that apply exclusively to New York City.

- Subdivision (c) – Definitions – has been amended to modify the definitions of Emergency Response Team and Post-Incident Response Team. Rather than requiring all schools in New York City to have unique teams in each of its schools, the amended regulation now allows such teams to be created on the district level with building-level participation.
- Subdivision (e) (1) – District-wide School Safety Plans – has been amended in relation to the components required for District-wide School Safety Plans in New York City. The following subparagraphs of subdivision (e) (1) will not be required in New York City District-wide School Safety Plans: (ii), (vii), (viii), (ix), (x), (xix) and (xx).
- It should be noted that subdivision (g) – Communication Liaisons – does not identify a chief communication liaison in New York City for local or State emergencies.

## Are the Plans Subject to Public Comment?

Both District-wide School Safety Plans and Building-level Emergency Response Plans must be made available for public comment at least thirty days prior to adoption by the School Board. Only a summary of each of the Building-level plans must be available for public comment. The School Board may adopt the plans only after at least one public hearing has been held which provides for the participation of school personnel, parents, students and other interested parties.

## Where Should Plans Be Submitted?

A copy of each District-wide School Safety Plan and any amendments to the plan must be submitted to the Commissioner of Education no later than thirty days after adoption. A copy of each Building-level Emergency Response Plan and any amendments must be filed with appropriate local law enforcement officials and with the State Police within thirty days of adoption. (See Resources Section for State Police addresses.)

# Guidelines For Developing School Safety Plans

## Introduction

The District-wide School Safety Plan provides the framework for a school district to identify and implement appropriate strategies for creating and maintaining a safe and secure learning environment for all its students. Developed by the District-wide School Safety Team, the district's plan provides the overall guidance and direction for development of the Building-level Emergency Response Plan for each of the school buildings in the district. While the district-wide plan covers a broad scope of activities, including violence prevention, intervention and response, the building plans focus more directly on critical actions that must be taken to protect the safety of students and adults in the event of an emergency. Taken together, the district and building plans provide a comprehensive approach to addressing school safety and violence prevention, and provide the structure where all individuals can fully understand their roles and responsibilities for ensuring the safety of the entire school community.

The Task Force recognized that ensuring that schools remain safe places of learning requires a major strategic commitment. The effectiveness of any safety plan hinges on the ability of school administrators and their safety teams to assess the district's unique concerns and security needs, and to identify and implement appropriate strategies for creating and maintaining a safe school environment.

The intent of the legislation emphasizes that effective school safety planning works best when school administrators, school staff, students, parents and community members undertake an honest and critical appraisal of a school's safety program and security needs. Developing a school safety plan requires the conduct of a systematic assessment of school safety and security, followed by the development or modification of a school safety plan that addresses the problems and needs identified by the assessment. Only then can a school safety plan truly meet the needs of its school community.

Recognizing the critical need of data in decision-making, the New York State Center for School Safety (NYSCSS) offers the following outline to consider in development of school safety plans for districts and schools that has been used successfully as a guide in many schools:

- **Data Collection:** What information does the school already have available? What else does the school need (internal and external sources)?
- **Data Analysis:** How can the school use this information to identify its needs?
- **Problem-Solving:** Based on the data, can the school identify what it needs to do?
- **Implementation:** Based on the research, what strategies are available that would be useful to the school community and address the identified needs?
- **Evaluation:** How does the school know its strategies have made a difference?

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The Task Force also recognized that the key to success is a community's ability to build a mechanism for true collaboration through involving law enforcement, schools, human services agencies, grass roots and faith-based community organizations, and parents and business people. Many districts across the State have established collaborative relationships in order to promote safer schools.

## Guiding Principles

A school safety planning workgroup of key State agencies with expertise in school safety, violence prevention, and risk management developed a set of guiding principles for school safety planning. The principles are as follows.

- Schools should build on what is already in place. Many school districts and school buildings have already developed school safety and violence prevention plans. These should be used as the foundation for meeting the new requirements.
- Plans should be developed through an open process with broad community participation. Students, parents, teachers, school leaders, public safety agencies and other key partners should be involved in plan development in a meaningful way. Broad participation by community members will gain their acceptance and support of school plans.
- Planning should be comprehensive, encompassing activities from early prevention through crisis response. In addressing the intent of the law, schools should focus on a process-driven approach to planning rather than on a checklist of activities that must be done.
- Planning should be based on an assessment of data. School safety plans will be more responsive to particular school needs when data related to the school is used as a basis for planning.
- Plans should be user-friendly, easy to read, and understandable. The plans should be widely disseminated within the community to foster broad acceptance and participation.
- Plans should clearly define roles and responsibilities. It is crucial that all key people know their roles and responsibilities, as well as the roles and responsibilities of others in the event of a crisis situation. Plans should also include contingency provisions to enable implementation when key individuals are unavailable or not in a position to perform their roles.
- Staff development should be included in the planning process. For plans to be effective, staff and other involved individuals need to develop their knowledge and skills about the components in the plans and actions to be taken for implementing the components in appropriate situations.
- Plans should be coordinated with nonpublic schools and recognize the needs of special school populations. Students and staff with disabilities, limited English speaking students and other special student populations should be addressed in all plans.
- Plans should be continually reviewed and updated to remain current. Changes in personnel, local conditions and other factors necessitate periodic review and updating of plans to ensure their applicability to current conditions.

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## Notes of Caution

The school safety planning workgroup also developed a list of suggestions based upon their prior experience in similar planning efforts that may be helpful to schools. These include the following:

- Don't reinvent the wheel. Schools should build upon existing plans and activities, as well as draw upon the experiences of others who have developed and implemented effective plans.
- Leadership is needed throughout the planning process. School and community leadership needs to be continuously provided to build and maintain the momentum for effective planning.
- Effective planning takes time. The planning process must include adequate time in order to ensure broad participation and active involvement of key partners in the development of plans.
- Beware of "packaged products". The temptation to seek an easy solution by purchasing or obtaining an "off the shelf", prepackaged school safety plan should be avoided as a way to meet the new requirements.
- Consider formal agreements, if necessary. Changes in personnel, new organizational arrangements or other factors within the schools and/or partner agencies may necessitate formal agreements with periodic review and updates to ensure the viability of plans over time.

## A Planning Framework

The following framework may prove useful as school safety teams prepare plans at the district and school building levels. For districts that have already prepared their plans, or have substantially completed their own planning process, the information below can be a useful tool for ensuring that their plans have addressed all legislative requirements.

***First:*** A sample format for both the district-wide and building-level school safety plans has been provided following this section of the document. A Building-level Emergency Response Plan Sample Summary format for public hearings is also provided. Both the District-wide School Safety Plan and the Building-level Emergency Response Plan contain a series of requirements that must be included in the plans. These requirements have been organized into a series of broad categories that group similar activities and strategies in order to reduce any redundancy and/or overlap in policies and procedures. Sample plans for both the District-wide School Safety Plan and the Building-level Emergency Response Plan that are included in this document are organized according to these four categories:

- General Considerations and Planning Guidelines
- Risk Reduction/Prevention and Intervention
- Response
- Recovery

Recovery is also referred to as "postvention" and includes those initiatives taken after a violent incident or other traumatic event has occurred.

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***Second:*** A series of resources have been developed to assist in developing school safety plans. Those resources are contained in the appendices of this document and will be helpful in the planning process.

- The first resource is a chart that provides an easy reference guide for districts and schools to identify the requirements in Commissioner's Regulations, Section 155.17. This chart represents only the minimal requirements required in the regulations. Many schools may wish to add additional components to meet their individual needs.

- The second resource represents a series of guiding questions that have been developed by the school safety planning workgroup for each of the four categories in the District-wide School Safety Plan and in the Building-level Emergency Response Plan. These guiding questions have been developed to serve as a tool to identify the key requirements and other considerations to be addressed in the plans. School districts or individual buildings may wish to add additional questions for consideration to meet their individual needs.

- The third resource is a Project SAVE School Safety Plan Worksheet that has been developed as a planning tool. The worksheet allows for the organizing of all the key information about policies and procedures in a convenient and easy-to-use format. This tool may be useful to districts and schools as a tool for the school safety teams to use in the planning process. This tool contains the following sections to identify:
    - whether the District-wide or Building-level School Safety Team is using the format;
    - which component of the plan is being considered;
    - which specific requirement is to be addressed;
    - guiding questions to stimulate discussion;
    - external and internal resources that could be used;
    - the tasks and activities that could assist the planning team in the planning process; and
    - a summary of the decisions or options selected by the district or school building.

- The fourth resource is a listing of all relevant State agencies and appropriate local contacts to assist in the planning process.

- The fifth resource is a series of websites which can be useful to school districts and to individual buildings to answer questions or provide information regarding general or specific issues about school safety planning.

- The sixth resource is a listing of print documents that school districts or individual school buildings have found useful in the planning process.

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## Using the Sample Formats and Resources as a Framework for Planning

The framework for planning provided in this document can be a useful tool to ensure that all important elements are included in the district and building plans. It also provides an easy-to-use format for communicating among individuals and groups participating in the planning process. The following steps provide one way of using the framework for developing school safety plans:

- Review the guiding principles and the notes of caution in this section with the school safety planning teams. Combined with knowledge of the law and regulations, they provide a good starting point for discussion among planning team members on where to begin the planning process. Based upon their knowledge and their experiences, team members may wish to modify, adapt and/or add principles or notes of caution that more fully reflect local needs and conditions.

- Determine if the four categories (General Considerations and Planning Guidelines, Risk Reduction/Prevention and Intervention, Response, and Recovery) are useful ways of organizing school safety planning activities for your district or school. These categories are suggested as one way of grouping similar tasks and activities for ensuring that all required elements are included in the district and school building plans. Depending upon local needs, planning team members may wish to consider other categories for grouping activities that may be more appropriate in the local setting.

- Use the guiding questions as an initial checklist of items that need to be addressed in the school safety plans. The guiding questions incorporate all the required components that need to be addressed in the plans. In many instances, schools have already developed policies and procedures that can be used in their new plans. In other cases, the guiding questions will serve to identify areas where additional work or more comprehensive approaches may be needed. Based upon their own experiences within the local school and community, planning team members may suggest additional questions that should be considered in developing the plans.

- Review the Project SAVE School Safety Plan Worksheet with planning team members.

- Examine the list of plan requirements. Discuss and clarify with team members what is included within each requirement so everyone has a clear understanding of what needs to be included in the plan. Examine existing plans already developed by the district or school to determine which requirements may need further development.

- Select a set of guiding questions that planning team members agree need to be addressed for any requirement. For example, if a district has not yet developed program initiatives for prevention and intervention strategies based on the district assessment, the guiding questions may be helpful to stimulate discussion.

- Identify the resources that are known and available to the district for use by the planning team in developing the school safety plan. A listing of these resources on the worksheet will enable all individuals to better understand the resources that were used as a basis for selecting certain strategies or activities. Under external resources, for example, the U.S. Education Department's document "Early Warning, Timely Response" may be the key external resource used to help school and community

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members better understand early warning signs of potentially violent behaviors. Similarly, the school district's current school emergency management plan may be a key internal resource used to meet certain new requirements.

- Determine the tasks and activities that need to be completed in order to develop all the required components in the school safety plan. For example, a policy for reducing potential acts of violence may call for a new system for the registration of all visitors and the wearing of a visitor pass when an individual visits any school. The task could be to establish visitor protocols for school visitors, with activities including: developing sign in sheets, identifying the roles and responsibilities of school staff when a visitor arrives, and specifying rules for school visitations. The planning worksheets can be used to document the person(s) or group who will complete the activities, and the timeframe for their completion.

- Prepare a concise summary of the key strategies and activities included in each category as a way of summarizing for all individuals the important elements in the school safety plan.

- Review and consider the Sample Outlines for the District-wide and Building-level School Safety Plans as a potential format for developing the school safety plans. Sample outlines are provided as one way of organizing the information for presentation in the plan. These sample plans provide the structure for the information to be entered for each plan at the district and building levels. For the School Building-level Emergency Response Plan, a sample summary outline is also provided since the plan itself is confidential and legislation requires that only a summary be provided for public comment. Some districts may have already developed their plans in another format or are considering organizing their plan differently. While no single format is required, all legislative and regulatory components must be included in the plans.

In conclusion, the New York State Education Department understands that school districts across the state are in varying phases of planning. Some districts have comprehensive school safety plans in place that have been tested over a period of time, and will have few adjustments to make in order to comply with the Commissioner's Regulations, Section 155.17. Other districts may need further assistance to meet all of the requirements in the regulations. The sample outlines and resources made available in this guide are designed to assist all districts in their planning process.

PROJECT SAVE
(Safe Schools Against Violence in Education)

# SAMPLE OUTLINE
# For **District-wide School Safety Plan**

*Commissioner's Regulation 155.17*

## Introduction

Discussion: The Introduction is used to provide information about the background of the plan. Since the district-wide plan is subject to public comment prior to its adoption, the introductory section offers an opportunity for a district to provide important background information, describe its philosophy that guided the planning process, and include any other information that may aid people who will be reviewing the plan. The district may state its intent to invite the greater school community to assist in providing a safe school environment, and discuss the collaboration that is critical to the plan. The district may also want to discuss its process of needs assessment and the data sources used to develop the plan, including any data specific to the need for the plan and any information that is relevant to violence prevention and school safety. The sample introduction provided below is one potential format for consideration to initiate this section. District specific information should be added to reflect the individual characteristics of the school district.

Emergencies and violent incidents in school districts are critical issues that must be addressed in an expeditious and effective manner. Districts are required to develop a District-wide School Safety Plan designed to prevent or minimize the effects of serious violent incidents and emergencies and to facilitate the coordination of the district with local and county resources in the event of such incidents or emergencies. The district-wide plan is responsive to the needs of all schools within the district and is consistent with the more detailed emergency response plans required at the school building level. Districts are at risk of a wide variety of acts of violence, natural, and technological disasters. To address these threats, the State of New York has enacted the Safe Schools Against Violence in Education (SAVE) law. This component of Project SAVE is a comprehensive planning effort that addresses risk reduction/prevention, response, and recovery with respect to a variety of emergencies in the school district and its schools.

Describe the process used by the district in developing this school safety plan, including any strategies such as community or student involvement and collaboration. The district may describe the data or process used for needs assessment and implementation of the plan to meet the individualized needs of the district in keeping with the intent of Project SAVE.

The ____________ School District supports the SAVE Legislation, and intends to engage in a planning process. The Superintendent of Schools encourages and advocates on-going district-wide cooperation and support of Project SAVE.

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## Section I: General Considerations and Planning Guidelines

*Discussion:* Section I is used to provide information about key considerations and planning guidelines that were used in developing the district-wide plan. The sample format shown below, for example, includes the purpose of the plan; an identification of the District-wide School Safety Team; an identification of the overall concepts of operation included in the plan; and a description of the plan review and public comment process that will be used in the district. As the district develops this section of its plan, specific information should be provided, such as the names and positions/affiliations of individuals on the planning team; how this plan supports the development and coordination of the Building-level Emergency Response Plans. This may be a section where the district describes what data collection methods it intends to use to identify school safety issues, how the data will be analyzed, which problems it wishes to resolve, and what implementation and evaluation strategies it will develop. Inclusion of procedures for public review and comment on the plan; date(s) for review and adoption of the plan by the Board of Education; and any other information deemed pertinent should be included in this section.

### A. Purpose

The _________ District-wide School Safety Plan was developed pursuant to Commissioner's Regulation 155.17. At the direction of the _____________ School District Board of Education, the Superintendent of ______________ School District appointed a District-wide School Safety Team and charged it with the development and maintenance of the District-wide School Safety Plan.

### B. Identification of School Teams

The _ _________ School District has appointed a District-wide School Safety Team consisting of, but not limited to, representatives of the School Board, students, teachers, administrators, parent organizations; school safety personnel; and, other school personnel. The members of the team and their positions or affiliations are as follows: ________________

### C. Concept of Operations

- Describe how the District-wide School Safety Plan is directly linked to the individual Building-level Emergency Response Plans for each school building. Protocols reflected in the District-wide School Safety Plan will guide the development and implementation of individual Building-level Emergency Response Plans.

- Describe the methodology used to develop the district-wide plan, including the involvement of the community and what data were used to determine the key elements of the plan.

- Indicate that in the event of an emergency or violent incident, the initial response to all emergencies at an individual school will be by the School Emergency Response Team, and what processes are in place to notify the district.

- Indicate that upon the activation of the School Emergency Response Team, the Superintendent of Schools or his/her designee will be notified and, where appropriate, local emergency officials will also be notified.

- Describe how county and state resources could supplement the districts efforts through existing protocols.

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### D. Plan Review and Public Comment

- Pursuant to Commissioner's Regulation, Section 155.17 (e)(3), this plan will be made available for public comment at least 30 days prior to its adoption. The district-wide plan may be adopted by the School Board only after at least one public hearing that provides for the participation of school personnel, parents, students and any other interested parties. The plan must be formally adopted by the Board of Education.
- Full copies of the District-wide School Safety Plan and any amendments will be submitted to the New York State Education Department within 30 days of adoption.
- This plan will be reviewed periodically during the year and will be maintained by the District-wide School Safety Team. The required annual review will be completed on or before July 1 of each year after its adoption by the Board of Education. A copy of the plan will be available at __(location)__.

## Section II: Risk Reduction/Prevention and Intervention

*Discussion:* Section II of the plan is used to identify and describe the district's policies and procedures for reducing the risk of violence; implementing programs and activities for prevention of violence; and establishing clear descriptions of actions that will be taken in the event of a violent incident or other school emergency. Research demonstrates that positive, skills-based approaches can increase the safety of students and teachers in school, as well as improve the community climate. The sample format below provides an example for consideration by districts of one way of organizing the information in the plan.

### A. Prevention/Intervention Strategies

***Program Initiatives***

Describe the programs and activities the district has used for improving communication among students and between students and staff, and reporting of potentially violent incidents, such as the establishment of:

- Non-violent conflict resolution training programs,
- Peer mediation programs and youth courts,
- Extended day and other school safety programs,
- Youth-run programs,
- Creating a forum or designating a mentor for students concerned with bullying or violence,
- Establishing anonymous reporting mechanisms for school violence, and
- Others based on district needs.

The district may also want to describe what strategies it may develop, based on its needs assessment, to create a positive, safe learning environment for students, such as community involvement in the schools, mentoring programs, or adjusting scheduling to minimize potential for conflicts or altercations.

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***Training, Drills, and Exercises***

- Describe the policies and procedures for annual multi-hazard school safety training for staff and students, including the strategies for implementing training related to multi-hazards. For example, the district may have established one or more of the following procedure(s) for annual multi-hazard school safety training for staff and students and would explain these procedures in this section: early go-home drill; table top exercise; live drill; and Emergency Management Team exercise.
- Describe the procedures the district uses for the review and conduct of drills and other exercises to test the components of the emergency response plan, including the use of tabletop exercises in coordination with local and county emergency response and preparedness officials.
- Provide a description of the duties, hiring and screening process, and required training of hall monitors and other school safety personnel acting in a school security capacity. This description could include collaborative agreements made by the district with state and local law enforcement officials designed to ensure that school safety officers and other security personnel are adequately trained, including training to de-escalate potentially violent situations.

***Implementation of School Security***

- Provide a description of the policies and procedures related to school building security, including, where appropriate, the use of school safety officers and or/security devices or procedures. Examples of school building security measures could include: entrance guard; hall monitor; visitor badge/sign-in procedure; video surveillance; metal detectors including building and/or handheld; security officer; security audit; dog; and random search.

***Vital Educational Agency Information***

- Describe how the district maintains certain information about each educational agency located in the school district, including information on: school population, number of staff, transportation needs, and the business and home telephone numbers of key officials of each such educational agency.

## B. Early Detection of Potentially Violent Behaviors

Explain how the district would implement policies and procedures for the dissemination of informative materials regarding the early detection of potentially violent behaviors, including, but not limited to: the identification of family, community and environmental factors to teachers, administrators, parents and other persons in parental relation to students of the school district or board, students and other persons deemed appropriate to receive such information. The district may also want to describe programs, training, and services the district may develop to prepare for violent incidents and lessen their impact, such as staff training in identifying early warning signs in students, early intervention/prevention strategies, or development of violence prevention instruction for all staff.

## C. Hazard Identification

Identify sites of potential emergency, which could also include the process for identifying the sites, the potential internal or external hazards or emergency situations identified, and the location of potential sites. The list of sites of potential emergency may include: all school buildings, playground areas, properties adjacent to schools, on and off-site athletic fields, buses, off-site field trips and others that the district's planning team chooses to identify.

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## Section III: Response

*Discussion:* Section III of the plan is used to identify and describe the district's policies and procedures for responding to acts of violence and other school emergencies. The sample plan format below provides one way for organizing important information about the district's plans for response, including potential policies for communication; responses to specific situations; response protocols; and procedures for obtaining, or providing, emergency assistance in cooperation with local government officials.

### A. Notification and Activation (Internal and External Communications)

- Describe the policies and procedures for contacting appropriate law enforcement officials in the event of a violent incident. The district's procedures might include maintaining a list of local law enforcement agencies, and the designation of the individual who is authorized to contact the law enforcement agencies.

- Describe the system that has been established for informing all educational agencies within a school district of a disaster or an act of violence. The system could include the following forms of communication:

  Telephone
  Fax/Email
  District Radio System
  NOAA Weather Radio
  Intercom
  Local Media
  Emergency Alert System (EAS)
  Others as appropriate

  The system may specify that in the event of an emergency, or impending emergency, the district will notify all principals/designees of facilities within the district to take the appropriate action.

- Describe the policies and procedures to contact parents, guardians or persons in parental relation to the students in the event of a violent incident or an early dismissal. The district might include using local media in some instances, or using a phone tree with emergency contact cards provided by students.

### B. Situational Responses

***Multi-Hazard Response***

Describe the district's multi-hazard response plans for taking actions in an emergency that may include the following situations:

Threats of Violence
Hostage/Kidnapping
Natural/Weather Related
Civil Disturbance
School Bus Accident
Gas Leak
Others as determined by the District-wide School Safety Team
Intruder
Explosive/Bomb Threat
Hazardous Material
Biological
Radiological
Epidemic

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### *Responses to Acts of Violence: Implied or Direct Threats*

Describe the district's policies and procedures for responding to implied or direct threats of violence by students, teachers, other school personnel and visitors to the school. The following types of procedure(s) could be used by the district:

- Use of staff trained in de-escalation or other strategies to diffuse the situation.
- Inform Building Principal of implied or direct threat.
- Determine level of threat with Superintendent/Designee.
- Contact appropriate law enforcement agency, if necessary.
- Monitor situation, adjust response as appropriate, include the possible use of the Emergency Response Team.

The district may also describe the training and professional development that is available to assist personnel, such as training in de-escalation or identification of early warning signs of potentially violent behavior.

### *Acts of Violence*

Describe the district's policies and procedures for responding to acts of violence by students, teachers, other school personnel and visitors to the school, including consideration of zero-tolerance policies for school violence. The following types of procedure(s) could be used by the district:

- Determine level of threat with Superintendent/Designee.
- If the situation warrants, isolate the immediate area and evacuate if appropriate.
- Inform Building Principal/Superintendent.
- If necessary, initiate lockdown procedure, and contact appropriate law enforcement agency.
- Monitor situation; adjust response as appropriate; if necessary, initiate early dismissal, sheltering or evacuation procedures.

### *Response Protocols*

Identify the district's selection of appropriate responses to emergencies, including protocols for responding to bomb threats, hostage takings, intrusions and kidnappings. The following protocols are provided as examples:

- Identification of decision makers.
- Plans to safeguard students and staff.
- Procedures to provide transportation, if necessary.
- Procedures to notify parents.
- Procedures to notify media.
- Debriefing procedures.

*Continued*

### *Arrangements for Obtaining Emergency Assistance from Local Government*

Provide a description of the arrangements for obtaining assistance during emergencies from emergency services organizations and local government agencies. The following examples are the types of arrangements that could be used by the district:

- Superintendent/Designee in an emergency contacts dispatch point or 911 center for fire or EMS response.
- Superintendent/Designee contacts highest-ranking local government official for notification and/or assistance.

### *Procedures for Obtaining Advice and Assistance from Local Government Officials*

Identify the procedures the district will use for obtaining advice and assistance from local government officials including the county or city officials responsible for implementation of Article 2-B of the Executive Law. The types of procedures for obtaining advice and assistance from local governments during countywide emergencies could include the following:

- Superintendent/Designee in an emergency will contact emergency management coordinator and/or the highest-ranking local government official for obtaining advice and assistance.
- The district has identified resources for an emergency from the following agencies: (examples include the Red Cross, fire department, police, private industry, private individuals, religious organizations and others).

### *District Resources Available for Use in an Emergency*

Identify the district resources which may be available during an emergency, which could include the identification of resources, such as facilities, buses and trucks.

### *Procedures to Coordinate the Use of School District Resources and Manpower during Emergencies*

Describe the district's procedures to coordinate the use of school district resources and manpower during emergencies, including the identification of the officials authorized to make decisions and the staff members assigned to provide assistance during emergencies.

### *Protective Action Options*

Describe plans for taking the following actions in response to an emergency where appropriate: school cancellation, early dismissal, evacuation, and sheltering. Examples of actions could include the following and could be made in cooperation with local emergency responders:

- School cancellation
  - Monitor any situation that may warrant a school cancellation – *decision maker/team.*
  - Make determination – *decision maker.*
  - Contact local media.
- Early dismissal
  - Monitor situation – *decision maker/team.*
  - If conditions warrant, close school – *decision maker.*
  - Contact Transportation Supervisor to arrange transportation.

*Continued*

- Contact local media to inform parents of early dismissal – *Incident Reporting Form.*
- Set up an information center so that parents may make inquiries as to the situation.
- Retain appropriate district personnel until all students have been returned home.

- Evacuation (before, during and after school hours, including security during evacuation and evacuation routes)
  - Determine the level of threat – *Superintendent/Designee.*
  - Contact Transportation Supervisor to arrange transportation – *Designee.*
  - Clear all evacuation routes and sites prior to evacuation.
  - Evacuate all staff and students to pre-arranged evacuation sites.
  - Account for all student and staff population. Report any missing staff or students to Building Principal.
  - Make determination regarding early dismissal – *Designee.*
  - If determination was made to dismiss early, contact local media to inform parents of early dismissal – *Incident Reporting Form.*
  - Ensure adult supervision or continued school supervision/security.
  - Set up an information center so that parents may make inquires as to the situation.
  - Retain appropriate district personnel until all students have been returned home.

- Sheltering sites (internal and external)
  - Determine the level of threat – *Superintendent/Incident Commander/Designee.*
  - Determine location of sheltering depending on nature of incident.
  - Account for all students and staff. Report any missing staff or students to designee.
  - Determine other occupants in the building.
  - Make appropriate arrangements for human needs.
  - Take appropriate safety precautions.
  - Establish a public information officer to provide information and current status of the situation to parents and other inquiring parties.
  - Retain appropriate district personnel until all students have been returned home.

*Continued*

## Section IV: Recovery

*Discussion:* Section IV of the plan is used to identify and describe the district's actions that will be taken after acts of threats or actual violent incidents or other emergencies that have had a major effect on the well being of students, school staff and the community at large. Project SAVE requires coordination of Building-level School Safety Plans with the statewide plan for disaster mental health services to assure that schools have access to federal, state and local mental health resources in the event of a violent incident. If the district chooses, Section IV can be used as the overall guidance for recovery that can facilitate plans at the building level. Educators can also use the recovery, sometimes referred to as the postvention phase, to evaluate its current plan, and develop additional strategies, such as school safety team training in crisis management and development of post-crisis procedures to restore safe school environments.

### A. District Support for Buildings

- Describe how district resources will support the Emergency Response Teams and the Post-Incident Response Teams in the affected school(s).

### B. Disaster Mental Health Services

- Describe how the district office will assist in the coordination of Disaster Mental Health Resources, in support of the Post-Incident Response Teams, in the affected school(s).
- The district may wish to describe how the recovery phase will result in reevaluation of current violence prevention and school safety activities and what the school can do to improve its plan.

### SUGGESTED APPENDICES

*(Not required to be filed with the Commissioner of Education)*

*Appendix 1:*

Listing of all school buildings covered by the District-wide School Safety Plan with addresses of buildings, and contact names and telephone numbers for building staff.

*Appendix 2:*

Copies of all Building-level Emergency Response Plans. Identification of local and state law enforcement agencies where building-level plans are filed.

*Appendix 3:*

Memoranda of Understanding or agreements relevant to implementation of the District-wide School Safety Plan and, where appropriate, Building-level Emergency Response Plans.

PROJECT SAVE
(Safe Schools Against Violence in Education)

# SAMPLE OUTLINE For **Building-level Emergency Response Plan**

*Commissioner's Regulation 155.17*

## Introduction

*Discussion:* The Introduction is used to provide information about the background of the Building-level Emergency Response Plan, including how the plan is coordinated with the District-wide School Safety Plan. Since a summary of the Building-level Emergency Response Plan is subject to public comment prior to its adoption, the introductory section offers the opportunity for a building to provide important background information, describe the philosophy that guided the planning process, and include any other information that may aid people who will be reviewing a summary of the plan. The sample introduction provided below is one potential format for consideration and building-specific information should be included.

Emergencies in schools must be addressed in an expeditious and effective manner. Schools are at risk of acts of violence, natural, and manmade disasters. To address these threats, the State of New York has enacted the Safe Schools Against Violence in Education (SAVE) law. Project SAVE is a comprehensive planning effort that addresses prevention, response, and recovery with respect to a variety of emergencies in schools.

Describe the process used by the building in developing this Building-level Emergency Response Plan, including any strategies such as community or student involvement and collaboration. The school may describe the data or process used for needs assessment and implementation of the plan to meet the individualized needs of the school in keeping with the intent of Project SAVE.

The ____________ School District supports the SAVE Legislation, and intends to facilitate the planning process. The Superintendent of Schools encourages and advocates on-going district-wide cooperation and support of Project SAVE.

## Section I: General Considerations and Planning Guidelines

*Discussion:* Section I is used to provide information about key considerations and planning guidelines that were used in developing the building-level plan. The sample format shown below, for example, includes the purpose of the plan; an identification of the building-level teams including the School Safety Team, the School Emergency Response Team, and the Post-incident Response Team; an identification of the overall concepts of operation included in the plan; and a description of the plan review and public comment process that will be used for the building's plan. As the school building develops this section of its plan, specific information should be provided, such as the names and positions/affiliations of individuals on the school's teams; procedures for public review and comment on the plan; date(s) for review and adoption of the plan by the Board of Education and any other information deemed pertinent for inclusion in this section.

*Continued*

## A. Purpose

The ______________ School's Building-level Emergency Response Plan was developed pursuant to Commissioner's Regulation 155.17. At the direction of the _____________ School District Board of Education, the Principal of ______________ School appointed a Building-level School Safety Team and charged it with the development and maintenance of the Building-level Emergency Response Plan.

## B. Identification of School Teams

The _____________ School has developed three emergency teams:

- Building-level School Safety Team
- Building-level School Emergency Response Team
- Building-level Post-incident Response Team

Provide a description of the roles of each team.

## C. Concept of Operations

- The initial response to all emergencies at ________________ School will be by the School Emergency Response Team.
- Upon the activation of the School Emergency Response Team, the Superintendent of Schools or his/her designee will be notified and, where appropriate, local emergency officials will also be notified.
- Efforts may be supplemented by county and state resources through existing protocols.

## D. Plan review and public comment

- Pursuant to Commissioner's Regulation, Section 155.17 (e)(3), a summary of this plan will be made available for public comment at least 30 days prior to its adoption. Building-level plans may be adopted by the School Board only after at least one public hearing that provides for the participation of school personnel, parents, students and any other interested parties. The plans must be formally adopted by the Board of Education.
- Building-level Emergency Response Plans shall be confidential and shall not be subject to disclosure under Article 6 of the Public Officers Law or any other provision of law, in accordance with Education Law Section 2801-a.
- Full copies of the Building-level Emergency Response Plan will be supplied to both local and State Police within 30 days of adoption.
- This plan will be reviewed periodically during the year and will be maintained by the Building-level School Safety Team. The required annual review will be completed on or before July 1 of each year after its adoption by the Board of Education.

*Continued*

## Section II: Risk Reduction/Prevention and Intervention

*Discussion:* Section II of the plan is used to identify and describe the building's policies and procedures for reducing the risk of violence; implementing programs and activities for prevention of violence; and establishing clear descriptions of actions that will be taken in the event of a violent incident or other school emergency. The sample format below provides an example of one way of organizing the information in the Building-level Emergency Response Plan.

### A. Designation of School Teams

- Identify the members of the Building-level School Safety Team, including the following members required by regulation:
  - School safety personnel
  - Local law enforcement officials
  - Representatives of teacher, administrator, and parent organizations
  - Local ambulance and other emergency response agencies
  - Other representatives the Board of Education or Chancellor in New York City deems appropriate
  - Other school personnel
  - Community members

- Identify the members of the Building-level Emergency Response Team, including the following members required by regulation:
  - Appropriate school personnel
  - Local law enforcement officials
  - Representatives from local, regional, and/or State emergency response agencies

- Identify the members of the Building-level Post-incident Response Team, including the following members required by regulation:
  - Appropriate school personnel
  - Medical personnel
  - Mental health counselors
  - Others who can assist the school community in coping with the aftermath of a serious violent incident or emergency

*Continued*

Sample Outline for Building-Level Emergency Response Plan, continued

### B. Prevention/Intervention Strategies

***Building Personnel Training***

Training for emergency teams and safety officers, including de-escalation training, should be conducted as determined in the district-wide plan. This section of the building's plan could be used to describe the training provided to all personnel acting in a school security capacity in the building.

***Coordination with Emergency Officials***

Describe the procedures for an annual review and the conduct of drills and exercises to test components of this school's plan, including the use of tabletop exercises, in coordination with local and county emergency responders and preparedness officials. Describe the role that the Emergency Response Team plays in coordinating these exercises.

***Annual Multi-hazard Training for Staff and Students***

The District-wide School Safety Plan requires annual multi-hazard training for students and staff. This section of the school's plan could describe how this training will be provided to staff and students in the building.

### C. Identification of Sites of Potential Emergencies

- The District-wide School Safety Plan requires an identification of sites of potential emergency. This section of the school building's plan can be used to describe how the Building-level School Safety Team will work to identify both internal and external hazards that may warrant protective actions, such as the evacuation and sheltering of the school population.

## Section III: Response

*Discussion:* Section III of the plan is used to identify and describe the school building's policies and procedures for responding to acts of violence and other school emergencies. The sample plan format below provides one way for organizing important information about the building's plans for response, including assignment of responsibilities, continuity of operations during an emergency, notification and activation of the plan, guidelines for specific emergencies and hazards, evacuation procedures, and crime scene security.

### A. Assignment of Responsibilities

- Provide a description of the chain of command consistent with the National Interagency Incident Management System (NIIMS)/Incident Command System (ICS) that will be used in response to an emergency including the role of the Building-level Emergency Response Team. In the event of an emergency, the response team may adapt NIIMS/ICS principles based on the needs of the incident.

### B. Continuity of Operations

This section can be used to describe how the building will continue operations during an emergency. A potential format for describing continuity of operations is as follows:

*Continued*

- In the event of an emergency, the Building Principal or his/her designee will serve as Incident Commander. The School Incident Commander may be replaced by a member of a local emergency response agency.
- After relinquishing command, the Building Principal or his/her designee may be asked to serve in a support role as part of a Unified Incident Command, if established, by the local emergency response agency.
- The school will establish a chain of command to ensure continuity of operations.

### C. Access to Floor Plans

- Describe the procedures that have been developed to assure that crisis response, fire and law enforcement agencies have access to floor plans, blueprints, schematics or other maps of the school's interior, school grounds and road maps of the immediate surrounding area.

### D. Notification and Activation

- Describe the internal and external communication systems that will be used in emergencies. The description could include, by way of example, some or all of the following:

  Telephone
  Intercom
  District radio system (portables)
  Local media
  Emergency Alert System (EAS)
  Bull horns
  Bus radio system
  Runner system
  NOAA Weather Radio

- This section could also include the following elements concerning notification and activation of the Building-level Emergency Response Plan:
  - The report of an incident or a hazard's development will be reported to the Building Principal or his/her designee as soon as possible following its detection.
  - In the event of an emergency, the Building Principal or his/her designee will notify all building occupants to take the appropriate protective action.
  - Further district notification procedures will be addressed as outlined in the district-wide plan.

### E. Hazard Guidelines

The District-wide School Safety Plan includes multi-hazard response plans for taking actions in response to an emergency. This section of the building's plan could be used to describe building-specific guidelines that could include the following types of emergencies:

Threats of Violence
Hostage/Kidnapping
Natural/Weather Related
Civil Disturbance
School Bus Accident
Gas Leak
Others as determined by the Building-level School Safety Team
Intruder
Explosive/Bomb Threat
Hazardous Material
Biological
Radiological
Epidemic

*Continued*

### F. Evacuation Procedures

Describe the policies and procedures that have been developed for the safe evacuation of students, teachers, other school personnel and visitors to the school in the event of a serious violent incident which include at least the following:

- Evacuation before, during and after school hours (including security during evacuation)
- Evacuation routes (internal & external)
- Sheltering sites (internal & external)
- Procedures for addressing medical needs
- Transportation
- Emergency notification of persons in parental relation to the students
- Other procedures as determined by the Building-level Safety Team.

### G. Security of Crime Scene

Describe the policies and procedures that have been established for securing and restricting access to the crime scene in order to preserve evidence from being disturbed or destroyed in cases of violent crimes on school property. Examples of policies and procedures that may be considered include the following:

- The Building Principal or designee is responsible for crime scene security until relieved by law enforcement officials.
- No items shall be moved, cleaned, or altered without prior approval from the appropriate law enforcement agency.
- Nothing in this section should be interpreted to preclude the rescue and aid of injured persons.

## Section IV: Recovery

*Discussion:* **Section IV of the plan is used to identify and describe the building's actions that will be taken after a severe act of violence or other emergency that has had a major effect on the well being of students, school staff and the community at large. Project SAVE requires coordination of Building-level School Safety Plans with the statewide plan for disaster mental health services to assure that schools have access to federal, state and local mental health resources in the event of a violent incident.**

Describe how the Building-level Emergency Response Plan will be coordinated with the statewide plan for disaster mental health services to assure that the school has access to federal, state and local mental health resources in the event of a violent incident. An example of the types of recovery actions that a building could consider, including the provision of mental health resources, is as follows:

The building's Post-incident Response Team has developed the following procedures for dealing with post-incident response:

*Continued*

Sample Outline for Building-Level Emergency Response Plan, continued

- Short term
  - Mental health counseling (students and staff)
  - Building security
  - Facility restoration
  - Post-incident response critique
  - Other

- Long term
  - Mental health counseling (monitor for post-traumatic stress behavior)
  - Building security
  - Mitigation (to reduce the likelihood of occurrence and impact if it does occur again)
  - Other

## SUGGESTED APPENDICES

***Appendix 1:***

District Street Map: to include the emergency response traffic control map

***Appendix 2:***

Building floor plan/schematic maps, to include:

- Evacuation Routes
- Emergency Response Area Layout
- Utility Shutoffs
- Shelter Locations

***Appendix 3:***

District Organization in a manner consistent with NIIMS/ICS, including ICS Position Descriptions

***Appendix 4:***

Emergency Supplies Inventory

***Appendix 5:***

District-owned vehicle inventory: to include buses and other vehicles

***Appendix 6:***

American Red Cross Shelter agreement and layout map

***Appendix 7:***

Memoranda of Understanding

***Appendix 8:***

Name, address, and contact numbers of building staff

***Appendix 9:***

Local resources' telephone numbers

## PROJECT SAVE
## (Safe Schools Against Violence in Education)

# SAMPLE SUMMARY
# Building-Level Emergency Response Plan
## For Public Hearing

*Commissioner's Regulation 155.17*

## Introduction

*Discussion:* The Introduction is used to provide information about the background of the Building-level Emergency Response Plan, including how the plan is coordinated with the District-wide School Safety Plan. Since a summary of the Building-level Emergency Response Plan is subject to public comment prior to its adoption, the introductory section offers the opportunity for a building to provide important background information, describe its philosophy that guided the planning process, and include any other information that may aid people who will be reviewing a summary of the plan. The sample introduction provided below is one potential format for consideration and building-specific information should be included. The entire introductory section of the building's plan could be used in the plan summary that will be made available for public review.

Legislation requires that Building-level Emergency Response Plans shall be confidential and shall not be subject to disclosure under Article 6 of the Public Officers Law or any other provision of law, in accordance with Education Law Section 2801-a. Pursuant to Commissioner's Regulation 155.17 (e)(3), a summary of this plan is being provided for public comment 30 days prior to its adoption. The district-wide and building-level plans may be adopted by the School Board only after at least one public hearing that provides for the participation of school personnel, parents, students and any other interested parties. The plans must be formally adopted by the Board of Education.

Describe the process used by the building in developing this Building-level Emergency Response Plan, including any strategies such as community or student involvement and collaboration. The school may describe the data or process used for needs assessment and implementation of the plan to meet the individualized needs of the school in keeping with the intent of Project SAVE.

Emergencies in schools must be addressed in an expeditious and effective manner. Schools are at risk of acts of violence, natural, and manmade disasters. To address these threats, the State of New York has enacted the Safe Schools Against Violence in Education (SAVE) law. Project SAVE is a comprehensive planning effort that addresses prevention, response, and recovery with respect to a variety of emergencies in schools.

The ____________ School District supports the SAVE Legislation and intends to facilitate the planning process. The Superintendent of Schools encourages and advocates on-going district-wide cooperation and support of Project SAVE.

*Continued*

# Section 1: General Considerations and Planning Guidelines

> *Discussion*: This section is used to provide information about key considerations and planning guidelines that were used in developing the building-level plan. The sample format shown below, for example, includes the purpose of the plan; an identification of the building-level teams including the School Safety Team, the School Emergency Response Team, and the Post-incident Response Team; an identification of the overall concepts of operation included in the plan; and a description of the plan review and public comment process that will be used for the building's plan. In the summary of the building's plan, specific information should be provided, such as the names and positions/affiliations of individuals on the school's teams; procedures for public review and comment on the plan; date(s) for review and adoption of the plan by the Board of Education and any other information deemed pertinent for inclusion in this section. This entire section of the building's plan could be used in the plan summary that will be made available for public review.

### A. Purpose

The ______________ School's Building-level Emergency Response Plan was developed pursuant to Commissioner's Regulation 155.17. At the direction of the ______________ School District Board of Education, the Principal of ______________ School appointed a Building-level School Safety Team and charged it with the development and maintenance of the School Emergency Response Plan.

### B. Identification of School Teams

The ______________ School has developed three emergency teams:

- Building-level School Safety Team
- Building-level School Emergency Response Team
- Building-level Post-incident Response Team

Provide a description of the roles of each team.

### C. Concept of Operations

- The initial response to all emergencies at ________________ School will be by the School Emergency Response Team.
- Upon the activation of the School Emergency Response Team, the Superintendent of Schools or his/her designee will be notified and, where appropriate, local emergency officials will also be notified.
- Efforts may be supplemented by county and state resources through existing protocols.

### D. Plan review and public comment

- This plan will be reviewed periodically during the year and will be maintained by the Building-level School Safety Team. The required annual review will be completed on or before July 1 of each year after its adoption by the Board of Education.

*Continued*

- Pursuant to Commissioner's Regulation 155.17 (e)(3), a summary of this plan will be made available for public comment at least 30 days prior to its adoption. The district-wide and building-level plans may be adopted by the School Board only after at least one public hearing that provides for the participation of school personnel, parents, students and any other interested parties. The plans must be formally adopted by the Board of Education.
- Building-level Emergency Response Plans shall be confidential and shall not be subject to disclosure under Article 6 of the Public Officers Law or any other provision of law, in accordance with Education Law Section 2801-a.
- Full copies of the Building-level Emergency Response Plan will be supplied to both local and State Police within 30 days of adoption.

## Plan Summary
## Section II: Risk Reduction/Prevention and Intervention

*Discussion:* Section II of the school's plan is used to develop a summary of the building's policies and procedures for reducing the risk of violence; implementing programs and activities for prevention of violence; and establishing clear descriptions of actions that will be taken in the event of a violent incident or other school emergency. The sample format below provides an example of one way of summarizing the information in the Building-level Emergency Response Plan. Building-specific information should be included in each section, except for where that information may jeopardize or hinder the school from carrying out its emergency response plan or endanger the health and safety of staff and students.

### A. Designation of School Teams

- A Building-level School Safety Team, including the members required by regulation, has been created. Members of the team include: school safety personnel; local law enforcement officials; representatives of teacher, administrator, and parent organizations; local ambulance and other emergency response agencies; community members; other school personnel; and other representatives appointed by the Board of Education.
- A Building-level Emergency Response Team, including the members required by regulation, has been created. Members of the team include: school personnel, local law enforcement officials, representatives from local, regional, and/or State emergency response agencies; and other appropriate incident response teams.
- A Building-level Post-incident Response Team, including the members required by regulation, has been created. Members of the team include: school personnel; medical personnel; mental health counselors; and others who can assist the school community in coping with the aftermath of a serious violent incident or emergency.

### B. Prevention/Intervention Strategies

- Training for emergency teams and safety officers, including de-escalation training, has been conducted as determined in the district-wide plan.

*Continued*

- Procedures for an annual review and the conduct of drills and exercises to test components of this school's plan, including the use of tabletop exercises, in coordination with local and county emergency responders and preparedness officials have been developed and will be implemented.
- The District-wide School Safety Plan requires annual multi-hazard training for students and staff. The school's plan describes how this training will be provided to staff and students in the building.

### C. Identification of Sites of Potential Emergencies

- The District-wide School Safety Plan requires an identification of sites of potential emergency. The Building-level School Safety Team has identified both internal and external hazards that may warrant protective actions, such as the evacuation and sheltering of the school population.

## Section III: Response

*Discussion:* Section III of the school's plan is used to develop a summary of the building's policies and procedures for responding to acts of violence and other school emergencies. The sample format below provides an example of one way of summarizing the information in the Building-level Emergency Response Plan for response, including assignment of responsibilities, continuity of operations during an emergency, notification and activation of the plan, guidelines for specific emergencies and hazards, evacuation procedures, and crime scene security. Building-specific information should be included in each section, except for where that information may jeopardize or hinder the school from carrying out its emergency response plan or endanger the health and safety of staff and students.

### A. Assignment of Responsibilities

- A chain of command consistent with the National Interagency Incident Management System (NIIMS)/Incident Command System (ICS) will be used in response to an emergency in the building. In the event of an emergency, the building's response team may adapt NIIMS/ICS principles based on the needs of the incident.

### B. Continuity of Operations

- The building has developed procedures to continue operations during an emergency.

### C. Access to Floor Plans

- Procedures have been developed to ensure that crisis response, fire and law enforcement agencies have access to floor plans, blueprints, schematics or other maps of the school's interior, school grounds and road maps of the immediate surrounding area.

### D. Notification and Activation

- Procedures have been developed to ensure that crisis response, fire and law enforcement agencies have

*Continued*

access to floor plans, blueprints, schematics or other maps of the school's interior, school grounds and road maps of the immediate surrounding area.

- Internal and external communication systems have been developed that will be used in emergencies.
- Procedures are in place for notification and activation of the Building-level Emergency Response Plan.

## E. Hazard Guidelines

- The District-wide School Safety Plan includes multi-hazard response plans for taking actions in response to an emergency. The school building's plan includes building-specific guidelines for the following types of emergencies: (examples)

| | |
|---|---|
| Threats of Violence | Intruder |
| Hostage/Kidnapping | Explosive/Bomb Threat |
| Natural/Weather Related | Hazardous Material |
| Civil Disturbance | Biological |
| School Bus Accident | Radiological |
| Gas Leak | Epidemic |
| Others as determined by the Building-level School Safety Team | |

## F. Evacuation Procedures

- Policies and procedures have been developed for the safe evacuation of students, teachers, other school personnel and visitors to the school in the event of a serious violent incident which include at least the following:
  - Evacuation before, during and after school hours (including security during evacuation)
  - Evacuation routes (internal & external)
  - Sheltering sites (internal & external)
  - Procedures for addressing medical needs
  - Transportation
  - Emergency notification of persons in parental relation to the students
  - Other procedures as determined by the Building-level School Safety Team.

## G. Security of Crime Scene

Policies and procedures have been established for securing and restricting access to the crime scene in order to preserve evidence from being disturbed or destroyed in cases of violent crimes on school property.

*Continued*

## Section IV: Recovery

*Discussion:* Section IV of the school's plan is used to develop a summary of the building's actions that will be taken after a severe act of violence or other emergency that has had a major effect on the well being of students, school staff and the community at large. Project SAVE requires coordination of Building-level Emergency Response Plans with the statewide plan for disaster mental health services to assure that schools have access to federal, state and local mental health resources in the event of a violent incident. The sample format below provides an example for consideration by buildings of one way of summarizing the information in the building plan for recovery. Building-specific information should be included in each section, except for where that information may jeopardize or hinder the school from carrying out its emergency response plan or endanger the health and safety of staff and students.

The Building-level Emergency Response Plan will be coordinated with the statewide plan for disaster mental health services to assure that the school has access to federal, state and local mental health resources in the event of a violent incident.

- Short term actions for recovery include: (examples)
  - Mental health counseling (students and staff)
  - Building security
  - Facility restoration
  - Post-incident response critique
  - Other
- Long term actions for recovery include: (examples)
  - Mental health counseling (monitor for post-traumatic stress behavior)
  - Building security
  - Mitigation (to reduce the likelihood of occurrence and impact if it does occur again)
  - Other

*Continued*

## SUGGESTED APPENDICES

*(Have been submitted to local and State Police with full plan)*

*Appendix 1:*

District Street Map: to include the emergency response traffic control map

*Appendix 2:*

Building floor plans/schematic maps, to include at least:

- Evacuation Routes
- Emergency Response Area Layout
- Utility Shutoffs
- Shelter Locations

*Appendix 3:*

District Organization in a manner consistent with NIIMS/ICS, including ICS Position Descriptions

*Appendix 4:*

Emergency Supplies Inventory

*Appendix 5:*

District-owned vehicle inventory: to include buses and other vehicles

*Appendix 6:*

American Red Cross Shelter agreement and layout map

*Appendix 7:*

Memoranda of Understanding

*Appendix 8:*

Name, address, and contact numbers of building staff

*Appendix 9:*

Local resources' telephone numbers.

# Project SAVE

# APPENDICES

# District-Wide School Safety Plans

## Regulatory Description of Components

| **Component** | **Regulatory Description** |
|---|---|
| **Potential Emergency** | Identification of sites of potential emergency. |
| **Plans for Response to Specific Emergencies*** | A description of plans for taking the following actions in response to an emergency where appropriate: (a) school cancellation; (b) early dismissal; (c) evacuation; and (d) sheltering. |
| **Implied or Direct Threats of Violence** | Policies and procedures for responding to implied or direct threats of violence by students, teachers, other school personnel and visitors to the school. |
| **Acts of Violence** | Policies and procedures for responding to acts of violence by students, teachers, other school personnel and visitors to the school, including consideration of zero-tolerance policies for school violence. |
| **Prevention and Intervention Strategies** | Appropriate prevention and intervention strategies such as: (a) collaborative arrangements with state and local law enforcement officials, designed to ensure that school safety officers and other security personnel are adequately trained, including being trained to de-escalate potentially violent situations, and are effectively and fairly recruited; (b) non-violent conflict resolution training programs; (c) peer mediation programs and youth courts; and (d) extended day and other school safety programs. |
| **Law Enforcement in Violent Incident** | Policies and procedures for contacting appropriate law enforcement officials in the event of a violent incident. |
| **Assistance During Emergencies*** | A description of the arrangements for obtaining assistance during emergencies from emergency services organizations and local governmental agencies. |
| **Local Government Officials*** | The procedures for obtaining advice and assistance from local government officials, including the county or city officials responsible for implementation of Article 2-B of the Executive Law. |
| **Identification of District Resources*** | The identification of district resources which may be available for use during an emergency. |
| **Procedures to Coordinate Use of School District Resources*** | A description of procedures to coordinate the use of school district resources and manpower during emergencies, including identification of the officials authorized to make decisions and of the staff members assigned to provide assistance during emergencies. |
| **Contacting Parents, Guardians or Persons in Parental Relation** | Policies and procedures for contacting parents, guardians or persons in parental relation to the students of the district in the event of a violent incident or an early dismissal. |

**Does not apply to a school district in a city having more than one million inhabitants.*

*Continued*

District-Wide School Safety Plans, Regulatory Description of Components, continued

| | |
|---|---|
| **School Building Security** | Policies and procedures relating to school building security, including, where appropriate, the use of school safety officers and/or security devices or procedures. |
| **Early Detection of Potentially Violent Behaviors** | Policies and procedures for the dissemination of informative materials regarding the early detection of potentially violent behaviors, including, but not limited to the identification of family, community and environmental factors to teachers, administrators, parents and other persons in parental relation to students of the school district or board, students and other persons deemed appropriate to receive such information. |
| **Annual Multi-Hazard Safety Training** | Policies and procedures for annual multi-hazard school safety training for staff and students. |
| **Test Components of the Emergency Response Plan** | Procedures for review and the conduct of drills and other exercises to test components of the emergency response plan, including the use of tabletop exercises, in coordination with local and county emergency responders and preparedness officials. |
| **Responses to Emergencies** | The identification of appropriate responses to emergencies, including protocols for responding to bomb threats, hostage-takings, intrusions, and kidnappings. |
| **Improving Communication with Students** | Strategies for improving communication among students and between students and staff and reporting of potentially violent incidents, such as the establishment of youth-run programs, peer mediation, conflict resolution, creating a forum or designating a mentor for students concerned with bullying or violence and establishing anonymous reporting mechanisms for school violence. |
| **Hall Monitors/Personnel Acting in a School Security Capacity** | A description of the duties of hall monitors and any other school safety personnel, the training required of all personnel acting in a school security capacity, and the hiring and screening process for all personnel acting in school security capacity. |
| **Informing All Educational Agencies*** | In the case of a school district, a system for informing all educational agencies within such school district of a disaster. |
| **Information About Educational Agencies*** | In the case of a school district, certain information about each educational agency located in the school district, including information on school population, number of staff, transportation needs and the business and home telephone numbers of key officials of each such agency. |

**Does not apply to a school district in a city having more than one million inhabitants.*

# Building-level Emergency Response Plans

## Regulatory Description of Components

| Component | Regulatory Description |
|---|---|
| **Safe Evacuation** | Policies and procedures for the safe evacuation of students, teachers, other school personnel and visitors to the school in the event of a serious violent incident or other emergency which may occur before, during, or after school hours, which shall include evacuation routes and shelter sites and procedures for addressing medical needs, transportation and emergency notification to persons in parental relation to a student. |
| **Emergency and Post-Emergency Response Teams*** | Designation of an emergency response team and a post-incident response team. |
| **Floor Plans** | Procedures for assuring that crisis response, fire and law enforcement officials have access to floor plans, blueprints, schematics or other maps of the school interior, school grounds and road maps of the immediate surrounding area. |
| **Internal and External Communication Systems in Emergencies** | Establishment of internal and external communication systems in emergencies. |
| **Chain of Command** | Definition of the chain of command in a manner consistent with the national interagency incident management system (NIIMS)/ incident command system (ICS). |
| **Disaster Mental Health Services** | Coordination of the school safety plan with the state-wide plan for disaster mental health services to assure that the school has access to federal, state, and local mental health resources in the event of a violent incident. |
| **Annual Review of Emergency Response Plan** | Procedures for an annual review and the conduct of drills and other exercises to test components of the emergency response plan, including the use of tabletop exercises, in coordination with local and county emergency responders and preparedness officials. |
| **Crime Scene** | Policies and procedures for securing and restricting access to the crime scene in order to preserve evidence in cases of violent crimes on school property. |

**In a school district in a city having a population of more than one million inhabitants, unique teams are not required in each school building. Such teams may be created on the district level with building-level participation.*

## PROJECT SAVE
## (Safe Schools Against Violence in Education)

# Sample **DISTRICT-WIDE SCHOOL SAFETY PLAN**

# GUIDING QUESTIONS

*Commissioner's Regulation 155.17*

This resource has been developed to provide districts with a series of questions based on the intent of Project SAVE to ensure that all districts have a district-wide school safety plan. Questions have been developed by a group of state agencies, BOCES, and school districts and are designed to assist districts in the planning process. Questions relating to the requirements in the Commissioner's Regulation 155.17 are listed, as well as probing questions that can assist districts further in the planning process. The guiding questions may be useful as the district discusses and creates its plan. The questions are generally organized to reflect the framework provided in the sample district-wide school safety plan, and emphasize only those sections of the plan where additional guidance may be helpful.

## General Considerations and Planning Guidelines

1. Has the district established the required district-wide school safety team?
2. Are all required members present, including representatives of the school board, students, teachers, administrators, parent organizations, school safety personnel and other school personnel?
3. Has the district given consideration to other members of the community who may be helpful as members of the district-wide school safety team?
4. Has the district considered the relationship between the district wide school safety team and the building-level school safety team? How will these groups interact?
5. In the event of an emergency or violent incident, does the district-wide plan reflect how the district will interact with an individual school emergency response team?
6. Has the district considered potential training for the members of the district-wide school safety team?
7. Have arrangements been made for regularly scheduled meetings and opportunities for communications?
8. Has the district made provisions for the review of the district-wide school safety plan by the District-wide School Safety Team?
9. Has the district made provisions for the scheduling of a public hearing at least 30 days prior to its adoption by the Board of Education?
10. Has the district made provisions for the submission of a full copy of the plan and any subsequent amendments to the New York State Education Department?

*Continued*

## Risk Reduction/Prevention and Intervention

***Prevention/Intervention Strategies: Program Initiatives***

1. Has a local assessment been conducted to determine strategies appropriate to the local area?
2. Has local data, such as that reported and summarized from the Uniform Violent Incident Report, been used to substantiate the need for security procedures and devices?
3. Are selected prevention and intervention strategies based on research findings of effectiveness, and are they evaluated to determine their impact in the district?
4. Have prevention and intervention programs been linked to community resources, including health and mental health?
5. Have prevention and intervention strategies been included in the district's Professional Development Plan to cover identified and required school safety training components?
6. Have nonviolent conflict resolution training programs, peer mediation programs and youth courts, extended day and other school safety programs been considered as ways of preventing potential violence?
7. Have character, citizenship and civility education programs been included?
8. Have strategies been developed for improving communication among students and between students and staff?
9. Do the strategies include safe and confidential ways for students to report potentially violent incidents?
10. Have best practices and effective strategies used by others been considered for improving communication?
11. Are students involved in programs regarding policy development?
12. Are students encouraged to serve as peer leaders or mentors for younger students?

***Prevention/Intervention Strategies: Training, Drills, and Exercises***

13. Have policies and procedures been developed for annual multi-hazard school safety training for staff and students?
14. Have procedures been developed for review and the conduct of drills and other exercises to test components of the emergency response plan?
15. Are tabletop exercises used to simulate real-life emergencies and responses by staff?
16. Are the drills and exercises conducted in coordination with local and county emergency responders and preparedness officials?
17. Are policies and procedures updated and/or modified as a result of information gained during drills and exercises?

*Continued*

### *Prevention/Intervention Strategies: Implementation of School Security*

18. Has the district developed a description of the policies and procedures related to school building security?

19. Have collaborative agreements been made with state and local law enforcement officials to ensure that school safety officers, if used, are adequately trained to de-escalate potentially violent situations, and are effectively and fairly recruited?

20. Have descriptions been developed of the duties of hall monitors and any other school safety personnel?

21. Has the training required of all personnel acting in a school security capacity been identified?

22. Has the hiring and screening process for all personnel acting in a school security capacity been identified?

### *Early Detection of Potentially Violent Behaviors*

23. Have policies and procedures been developed for the dissemination of informative materials regarding the early detection of potentially violent behaviors?

24. Have materials been distributed to teachers, administrators, school personnel, persons in parental relation to students, students and others deemed appropriate to receive such information?

25. Have staff been trained on the U.S. Department of Education's "Early Warning, Timely Response" document relating to early identification of potentially violent behaviors?

26. Has consideration been given to integrating skills-based violence prevention education into health education and other related curricula?

27. Have staff been trained to identify family, community and environmental factors that may lead to potentially violent behaviors?

28. Are staff trained on identification of risk and protective factors to help children?

### *Hazard Identification*

29. Have districts identified sites of potential internal and external emergencies?

30. Have potential hazards in the neighborhood and community been considered, such as facilities containing toxic, chemically reactive, and/or radioactive materials; high voltage power lines; transportation routes of vehicles including trucks and trains carrying hazardous materials; underground gas and oil pipelines; underground utility vaults and above-ground transformers; multi-story buildings vulnerable to damage or collapse; water towers and tanks; and other potentially hazardous sites in your community?

31. Has the district consulted with your local emergency managers on the hazard analysis for the area in which your school district is located?

*Continued*

## Response

### *Notification and Activation*

1. Are there policies and procedures for contacting appropriate law enforcement officials in the event of a violent incident or other emergency?
2. Are there provisions for notifying appropriate agencies, including police, fire, rescue, mental health, and others, where necessary?
3. Has an appropriate local law enforcement liaison for the district's area been identified?
4. Has a communication protocol been established with and between the local law enforcement agencies?
5. Have staff been trained on emergency reporting procedures?
6. Have appropriate responses been identified for responding to emergencies?
7. Are there protocols for responding to bomb threats, hostage-takings, intrusions and kidnappings?
8. Have local law enforcement officials been consulted about the protocols?
9. Have current State Education Department materials been reviewed to link protocols to recommended procedures?
10. Are students and teachers knowledgeable about what to do in an emergency?
11. Have policies and procedures been developed for contacting parents, guardians or persons in parental relation to the students in the event of a violent incident or an early dismissal?
12. Do the policies and procedures address issues of ensuring accurate, timely and consistent information to parents?
13. Do the policies and procedures identify the medium (i.e., telephone call, press release, letter, other) that will be used to communicate with parents?
14. Have parents been informed about the ways they will be contacted in the event of an emergency, including information provided in the primary language of the parents?
15. Do you have policies and procedures for responding to media inquires?
16. Do you have a media liaison or public information officer?
17. Do you have a dedicated emergency phone line to use in an emergency?

### *Situational Responses: Multi-hazard Responses*

18. Are there provisions for taking action in emergencies?
19. Are there descriptions of actions to be taken in response to specific emergencies, including school cancellation, early dismissal, evacuation and sheltering?
20. Are both internal and external evacuation routes included in the plan?
21. Do these actions include provisions for incidents before, during and after school hours?
22. Are provisions included for evacuation of building occupants with special needs?
23. Has there been an identification of district resources that may be available during an emergency?

*Continued*

24. Are there provisions for emergency supplies and first aid kits for all schools?
25. Are portable communication devices available, if they are needed?
26. Are there provisions for transportation in an emergency?

***Situational Responses: Responses to Acts of Violence, Including Implied or Direct Threats***

27. Are there policies and procedures for responding to implied or direct threats of violence by students, teachers, other school personnel and visitors to the school?
28. Is there an agreement with state/local law enforcement offices to ensure that safety officers and other security personnel are adequately trained in de-escalation of potentially violent situations?
29. Do the policies and procedures include notification of appropriate school authorities in impacted buildings?
30. Have one or more members of school staff been trained in de-escalation of potentially violent situations?
31. Are staff and students knowledgeable about what to do when there is a direct or implied threat of violence?
32. Have the terms "implied" and "direct" threats been defined with input from the district's legal counsel, and are they included in the district's code of conduct?
33. Are there policies and procedures for responding to acts of violence by students, teachers, other school personnel and visitors to the school, including consideration of zero-tolerance policies for school violence?
34. If zero-tolerance policies are considered, are they age and incident appropriate?
35. Do teachers, students and school staff understand what to do in the event of a violent incident?

***Situational Responses: Response Protocols and Relationships with Other Agencies***

36. Has a description of procedures to coordinate the use of school district resources and manpower during an emergency been prepared?
37. Are the officials authorized to make decisions in an emergency identified?
38. Are staff members assigned or designated to provide assistance during an emergency identified?
39. Have all school buildings received information on district-wide procedures?
40. Are roles and responsibilities of district and school staff clearly defined?
41. Are there contingency provisions if one or more key individuals are not available, or unable to perform their roles and responsibilities?
42. Have descriptions been developed of the arrangements for obtaining assistance during emergencies from emergency services organizations and local governmental agencies?
43. Are the descriptions reviewed and updated on a periodic basis to reflect any changes in personnel, organizational structures or other conditions?
44. Has a system been developed for informing all educational agencies within the school district of a disaster?

*Continued*

45. Has information been gathered and documented about each educational agency located in the school district, including information on school population, number of staff, transportation needs, and the business and home phone numbers of key officials of each educational agency?
46. Do you know what type of internal communication system other schools in your area are using (i.e. code words or bells)?
47. Have procedures been developed for obtaining advice and assistance from local government officials including the county or city officials responsible for implementation of Article 2-B of the Executive Law?
48. Have policies and procedures been developed related to school building security, including, where appropriate, the use of school safety officers or security devices and procedures?
49. Has a security assessment of school buildings been conducted in cooperation with law enforcement, school security staff, teachers, other school staff, and others, where appropriate?
50. Has local data been used to substantiate the need for security procedures and devices?
51. Are school visitors required to sign in, sign out, and wear visible visitors passes when visiting school buildings?

## Recovery

1. Do members of the District-wide School Safety Team know their roles and responsibilities?
2. Does each building in the district have a Post-Incident Response Team?
3. Have you identified district resources that will assist in the recovery process?
4. Have these resources been involved in the planning process?
5. Have you educated staff in the policies and procedures of recovery efforts?
6. Have you designated someone to coordinate resources from the county and state (i.e., Disaster Mental Health Services)?
7. How will the District-wide School Safety Team assist in response and recovery to an affected building(s) in support of local teams?
8. Who, at the district level, has been designated to respond to the affected building(s)?
9. Have you considered how you will relocate students and continue their education for an extended period of time if a disaster/emergency renders a building unsafe to occupy?
10. Have you identified personnel who will work with local, state, and federal officials, in evaluating damage assessment of district property?
11. Have you identified personnel that can document cost-related expenditures that may be incurred from a disaster/emergency?
12. Have you considered improvements that can be made to district facilities if such facilities are damaged or destroyed during a disaster/emergency? (These efforts would result in district facilities being more resistant to suffering similar or worse damage in the future.)

## PROJECT SAVE
## (Safe Schools Against Violence in Education)

# Sample BUILDING-LEVEL EMERGENCY RESPONSE PLAN

# GUIDING QUESTIONS

*Commissioner's Regulation 155.17*

This resource has been developed to provide individual school buildings with a series of questions based on the intent of Project SAVE to ensure that all individual buildings within school districts have in place a building-level emergency response plan. Questions have been developed by a group of state agencies, BOCES, and school districts and are designed to assist individual school buildings in the planning process. Questions relating to the requirements in the Commissioner's Regulation 155.17 are listed as well as probing questions that can assist buildings further in the planning process. The guiding questions may be useful as the building discusses and creates its plan. The questions are generally organized to reflect the framework provided in the sample building-level emergency response plan.

## General Considerations and Planning Guidelines

1. Has the school established the required building-level school safety team?
2. Are all required members present, including representatives of teachers, administrators, parent organizations, school safety personnel, other school personnel, community members, local law enforcement officials, local ambulance or other emergency response agencies and any other representatives?
3. Have team members been notified and their roles defined?
4. Has the school given consideration to including students who may be helpful as members of the building-level school safety team?
5. Has the school considered the relationship between the district-wide school safety team and the building-level school safety team and how these groups interact?
6. In the event of an emergency or violent incident, does the building-level school safety plan reflect how the school will interact with the district?
7. Has the building developed a list of building staff with names, addresses, and telephone numbers?
8. Has the school considered potential training for the members of the building-level school safety team in collaboration with district-wide training?
9. Have arrangements been made for regularly scheduled meetings and opportunities for communications?

*Continued*

10. Has the school made provisions for the review of the plan by the building-level school safety team?
11. In cooperation with the district, has the building made provisions for the scheduling of a public hearing at least 30 days prior to its adoption by the Board of Education?
12. Has a summary of the building-level plan been developed for the purposes of the public hearing?
13. Has the building team developed procedures for annually reviewing the building-level emergency response plan?
14. Has the plan been approved by the Board of Education after at least one public hearing?
15. Has the school made provision for and submitted a full copy of the plan and any subsequent amendments to the New York State Police and local law enforcement agencies?

## Risk Reduction/Prevention and Intervention

### *Designation of School Teams*

1. Has the building-level school safety team designated an emergency response team, other appropriate incident response teams, and a post-incident response team?
2. Do team members know their roles and have they been trained to perform them?
3. Are school personnel familiar with the local emergency planner and staff, including Disaster Mental Health staff?

### *Building/Personnel Training*

4. Has training for emergency teams and safety officers, including de-escalation training been conducted?

### *Coordination with Emergency Officials*

5. Is there a plan in place for annually testing components of the plan?
6. Are both evacuation and reverse evacuation plans practiced?
7. Are shelters in place and/or lockdown procedures drills practiced?
8. During drills, are student accountability systems tested (staff and visitors)?
9. During evacuation drills, are exits regularly blocked to test secondary evacuation routes?

### *Annual Multi-hazard Training*

10. Is annual multi-hazard training for staff (including substitutes) provided?
11. Is annual multi-hazard training for students provided?

### *Identification of Sites of Potential Emergencies*

12. Have potential internal and external hazards been identified? (Risk analysis)

*Continued*

## Response

### *Assignment of Responsibilities*

1. Has the building-level chain of command been developed and communicated?
2. Have internal and external communication systems been identified, including notification requirements at the district level?
3. Do the participants know their roles within the ICS System?
4. Has ICS training been provided to appropriate staff?
5. Are there methods to identify staff (at least crisis team members) so that outside agency personnel can readily identify team members?

### *Continuity of Operations*

6. Are there clear mechanisms in place to identify, at any point in the plan, who is in charge?
7. Is there a method to reassess needs, evaluate services to date, and plan for transition to the recovery phase?
8. Are there follow-up procedures in place to individuals or groups in need of disaster mental health services?

### *Access to Floor Plans*

9. Have you included floor plans and schematics in the plan?
10. Does the school have a procedure in place for updating the floor plans and schematics?

### *Notification and Activation*

11. Are there mechanisms to ensure that all appropriate agencies are notified and that resources and services will be coordinated?
12. Has a person been identified to coordinate and interface with the media?
13. Are there public information campaigns related to available disaster mental health services?

### *Hazard Guidelines*

14. Have you developed specific guidelines for: natural/weather related incidents, civil disturbances, bomb threats, intruders, school bus accidents, gas leaks, hazardous material, biological, threats of violence, hostage/kidnappings, radiological, and others as determined by the Building-level Safety Team?
15. Does your building-level plan address implied or direct threats of violence?
16. Does your building-level plan address responding to acts of violence?
17. Has the risk of a secondary device been addressed?

*Continued*

### *Evacuation Procedures*

18. Does the building level school safety plan address incidents before, during, and after school hours? Have procedures been developed to address medical needs?
19. Have sheltering agreements been identified and appended to the building-level plan?
20. Have internal and external shelter sites been identified?
21. Does your plan address internal and external evacuation routes?
22. Does the plan address emergency notification of persons in parental relationship to students?
23. Has a vehicle inventory list been developed?
24. Has the building developed an emergency supplies inventory?
25. Does your plan provide for evacuation of building occupants with special needs?

### *Security of Crime Scene*

26. Has the building developed crime scene management guidelines?
27. Are policies and procedures for security of the crime scene understood by all parties?

## Recovery

1. Has your post-incident response team been activated?
2. Has the building-level team addressed short-term and long-term recovery issues?
3. Does the plan provide access to local and state mental health resources?
4. Are there provisions to maintain contact with the County Disaster Mental Health Response Team to notify it of changing needs or potential problems?
5. Are there strategies in place to reassess disaster mental health needs of victims and relatives to evaluate and refer to ongoing treatment if Brief Critical Incident Stress Management techniques are not restoring children to pre-disaster levels both psychologically or scholastically?
6. Are there methods to debrief daily or as needed to ensure that changing conditions are accommodated?

# Project SAVE School Safety Plan Worksheet

(This worksheet is provided to assist districts or individual school buildings in the planning process for Project SAVE. The worksheet may be used by the district or a school to outline the planning process for a specific component of Project SAVE, and provides a guideline for the district to follow in developing strategies for that component. This format is provided as a guide for use at the local level.)

| | |
|---|---|
| **Focus**<br>*(Select one)* | ☐ **District-wide School Safety Plan**<br>☐ **Building-level Emergency Response Plan** |
| **Component**<br>*(Select one)* | ☐ **General Considerations**<br>☐ **Risk Reduction/Prevention and Intervention**<br>☐ **Response**<br>☐ **Recovery** |
| **Specific Requirement to Be Addressed** | *List here the specific regulatory requirement that the district or school building would like to address. (Examples might include the identification of sites of potential emergencies, creation of evacuation procedures, or other regulatory requirements that the district wishes to explore further.)* |

**Guiding Questions Selected By District to Guide Planning Process**

*(The district or school building may wish to review the Guiding Questions provided in the resource section of this document to determine the considerations it wishes to address. All guiding questions are numbered for reference purposes.)*

**Available Resources Known to District**

*(List here the resources that are available to the school safety team. External resources may include documents, websites or community resources that could be consulted. Internal resources may include knowledgeable school personnel, existing policies, or other internal documents that may be helpful.)*

| **External** | **Internal** |
|---|---|
| • ______________________ | • ______________________ |
| • ______________________ | • ______________________ |
| • ______________________ | • ______________________ |
| • ______________________ | • ______________________ |
| • ______________________ | • ______________________ |
| • ______________________ | • ______________________ |

*Continued*

Project SAVE School Safety Plan Worksheet, continued

## Safety Team Planning Process

*(The district or the building-level safety team may outline the steps it will take to develop a specific component of the district-wide or building level safety plan. This format provides the team with an outline for identifying the tasks to be accomplished and the activities necessary to complete the tasks.)*

| Tasks | Activities | Who | When |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Summary

*(For its planning records, the district or individual school building may choose to summarize its decisions or options selected to meet a regulatory requirement.)*

# PROJECT SAVE
# (Safe Schools Against Violence in Education)
# Selected Web-Based Resources

## General Websites

**American Association of School Administrators**
*www.aasa.org.*
This site offers a variety of articles on school safety and violence prevention.

**American Red Cross**
*http://www.redcross.org/disaster/masters/*
This site offers a program developed by the American Red Cross to help teachers integrate disaster safety concepts into their regular lesson plans.

**ERIC Clearinghouse on Urban Education**
*http://eric-web.tc.columbia.edu*
This site features digests, short bibliographies, parent guides, key abstracts (short summaries), additional publications, and other information relating to major budget areas. School safety is a major subject area.

**Federal Bureau of Investigation (FBI)**
*http://www.fbi.gov/kids/kids.htm*
This site is specifically geared for children and teachers. It offers games, safety tips., and guides.

**Federal Emergency Management Agency (FEMA)**
*http://www.fema.gov/kids/*
This site teaches students how to be prepared for disasters and how to prevent disasters by taking action now! Students can learn what causes disasters, play games, read stories and become a "Disaster Action Kid."

**Guide for Preventing and Responding to School Violence**
*http://www.theiacp.org/pubinfo/Pubs/pslc/svindex.htm*
The International Association of Chiefs of Police (IACP) and the National Crime Prevention Council, with help from law enforcement officers and school administrators, and support of the Bureau of Justice Assistance, created this document to help begin and enhance programs and strategies that will prevent violence in schools and the community.

**National Association of School Psychologists**
*http://www.naspweb.org/*
The site provides a wide variety of resources toward the goal of promoting educationally and psychologically healthy environments for students.

**National Fire Protection Association (NFPA)**
*http://www.nfpa.org/Education/Consumers_and_Families/Fire_Safety_Information/*
This site offers a program for talking to children about disasters.

**National School Boards Association**
*www.nsba.org*
This site has released a 10 point safe schools plan, available on-line at www.keepschoolssafe.org

**National School Safety Center**
*http://www.nssc1.org/*
The center is an internationally recognized resource for school safety information, training and violence prevention. The site has information on successful violence preventions strategies, data on school violence, and training opportunities.

**National Weather Service/National Oceanic & Atmospheric Administration (NOAA)**
*http://www.education.noaa.gov/*
NOAA distributes and produces many educational activities. This site has been designed to help students, teachers, librarians and the general public access NOAA's educational activities, publications, and booklets.

**New York State Center for School Safety**
*www.mhric.org/scss*
The New York State Center for School Safety collaborates with state agencies to assist in creating safe learning environments, provides a clearinghouse for school safety resources with an emphasis on comprehensive safe schools planning an Project Save. Other initiatives, such as extended school day programs and protecting students from harassment, and hate crimes are featured on this site.

*Continued*

Project SAVE – Selected Web-based Resources, continued

**New York State Division of Criminal Justice Services, Funding and Program Assistance**
*http://criminaljustice.state.ny.us/ofpa/index.htm*
The website includes information on: grantsmanship tips, whatís new, staff directory, grantee forms, concept paper format, LAMIS 2000, FAQs, links to related sites, and agency contacts.

**New York State Division of Criminal Justice Services, Office of Public Safety**
*http://criminaljustice.state.ny.us/ops/index.htm*
This website contains a brief description of the DARE police officer training program offered through the DCJS Office of Public Safety.

**New York State Division of Criminal Justice Services, Child Safety and Missing Children**
*http://criminaljustice.state.ny.us/missing/index.htm*
The website includes information on: Internet Crimes Against Children Task Force, missing child pictures, child safety programs, college campus safety, runaway information, clearinghouse information, annual reports, web links, and publications order forms.

**New York State Emergency Management Office**
*www.nysemo.state.ny.us*
The SEMO website is a good source for access to training materials and upcoming courses, including training in the Incident Command System (ICS). Emergency planning materials are also available, including HAZNY (Hazards New York) which is a tool used to identify and rank hazards that may potentially effect a school or school district. Additional links include SEMOís mitigation section, hazardous weather information, links to local emergency management officials, and access to many State and federal agencies.

**New York State Police**
*www.troopers.state.ny.us/PSAC/PSACindex.html*
The New York State Police web site has several resource materials available including: Safe Schools Programs - A series of programs for all school employees about prevention, intervention and response to school violence incidents; Field Trip Attendance System - A safety first system used for school trips to aid in chaperoning and tracking students; Gotta Go Bags - What do you need during a school emergency situation? This checklist will get you ready; Step Away for Safety - A child abduction prevention program for 4th - 6th grade students. This is a great program to give just prior to a field trip; Crime Scene Management Pamphlet and Program - Is there anything I can do to help protect evidence at a school crime scene prior to police arrival?

**New York State Education Department - Office of Facilities Planning**
*www.emsc.nysed.gov/facplan/*
The State Education Department's Office of Facilities Planning web site offers a wide variety of school emergency and safety planning information and guidance.

**Safe and Drug Free Schools Program (United States Department of Education)**
*http://www.ed.gov/offices/OESE/SDFS/*
The Safe and Drug-Free Schools Program is the Federal government's primary vehicle for reducing drug, alcohol and tobacco use, and violence, through education and prevention activities in our nation's schools. This program is designed to prevent violence in and around schools, and strengthen programs that prevent the illegal use of alcohol, tobacco, and drugs, involve parents, and are coordinated with related Federal, State and community efforts and resources.

**Safe Schools Coalition**
*http://www.ed.mtu.edu/safe/*
The Safe Schools Coalition gathers the skills and resources of diverse national organizations to address a wide variety of school safety issues, including gang behavior, youth conflicts, and others.

**United States Department of Education**
*www.ed.gov*
This site offers a vast array of resources, from publications regarding school safety and violence prevention to extended research.

**United States Department of Justice**
*www.usdoj.gov*
This site offers a vast array of resources, from publications regarding violence prevention and school safety to statistical information regarding youth violence.

*Continued*

# Schools of Ground Zero

> "This report should serve as a 'wake up' call to every public health department, Board of Education, and school system in the country—that they all need to be partners in disaster planning. The wellbeing of our children depends on it."
>
> —Mohammed N. Akhter, MD, MPH
>
> Executive Director, American Public Health Association

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